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Assessment of a User Guide for One Semi-Automated Forces (OneSAF) Version 2.0

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September 2009

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U.S. Army Research Institute
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14. ABSTRACT *(Maximum 200 words)*:

A User Guide was developed for One Semi-Automated Forces (OneSAF) version 2. It was designed to assist Army Research Institute (ARI) researchers and other first-time users who desire to use this simulation capability in their research or training application. The User Guide contains detailed, illustrated steps of the core procedures required to develop a basic scenario at the platoon and company echelons, thus serving as a prototype for guides that support future versions of OneSAF. Subject matter experts from the Maneuver Battle Lab at Ft. Benning, GA reviewed the User Guide and completed an assessment of it. Additions were made to the User Guide to address their recommendations. The revised User Guide is included as an Appendix to the report. A copy of the User Guide (CD-ROM) can obtained from the ARI Research Unit at Ft. Benning GA.

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ASSESSMENT OF A USER GUIDE FOR ONE SEMI-AUTOMATED FORCES (OneSAF) VERSION 2.0

EXECUTIVE SUMMARY

Research Requirement:

The Army's current constructive simulation model is One Semi-Automated Forces (OneSAF). OneSAF supports training, analyses, research, experimentation, mission planning and rehearsal activities. Prior Army Research Institute research on how OneSAF version 1.0 could support leader mission planning and course of action analysis showed potential for these particular applications. There was a need to develop a more detailed User Guide for internal ARI research efforts and first-time users who would apply OneSAF at the company level, as well as one that was consistent with the current version of OneSAF. This report documents the User Guide that was produced, as well as an assessment of the User Guide by experts from the Maneuver Battle Lab (MBL) who use OneSAF in their simulation experiments.

Procedure:

The User Guide was based on version 2 of OneSAF which was released in 2008. It was designed for individuals who use OneSAF in the single user, stand-alone mode, not the networked, multi-user, distributed mode. Many lessons learned on OneSAF procedures that were problematic for users in the prior research were addressed with the format, organization, and step-by-step illustrations in the User Guide. Major topics covered were the primary OneSAF interfaces; fundamentals of start-up, saving, and reloading scenarios; creating a basic scenario, how to specify behaviors typical of platoon and company operations; and additional OneSAF features that facilitate scenario development. Seven OneSAF experts from the MBL reviewed the User Guide. They then completed a survey on their experience with OneSAF, and on the clarity and adequacy of the information in the User Guide.

Findings:

Feedback from the MBL experts was positive, with few suggested changes. As a result of the feedback, two tasks/behaviors were added to the User Guide as these were used frequently by the experts and were not in the User Guide they reviewed. In addition, a section on how to execute interventions while the scenario is running was included.

Utilization and Dissemination of Findings:

The MBL requested that they be allowed to use the User Guide to train new staff members in their lab as the documentation filled a training gap. The User Guide was also disseminated to the Project Manager-OneSAF. One SAF scenario development requires military technical and tactical knowledge, as well as expertise with OneSAF functions. The User Guide fully illustrates the core functions and steps necessary to create a scenario at the platoon and

company levels. This detailed mode of presentation greatly helps first-time users of OneSAF and can serve as a prototype for guides that support future versions of OneSAF.

ASSESSMENT OF A USER GUIDE FOR ONE SEMI-AUTOMATED FORCES (OneSAF) VERSION 2.0

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ASSESSMENT OF A USER GUIDE FOR ONE SEMI-AUTOMATED FORCES (OneSAF) VERSION 2.0

Background

In September 2006, the U.S. Army Program Executive Office for Simulation, Training and Instrumentation (PEO STRI) released the first of the new Army simulation software called One Semi-Automated Forces (OneSAF). Designed for brigade and below combat and non-combat operations, OneSAF is described as a composable, next-generation, entity-level computer generated forces (CGF) simulation (PEO STRI, 2007).

The OneSAF software is a simulation suitable for supporting training, analyses, research, experimentation, mission planning, and rehearsal activities. It is designed for use by three distinct Army Modeling and Simulation domains. Specifically, the Advanced Concepts and Requirements (ACR) domain uses OneSAF for experimentation and analyses on Army doctrine and force-related concepts. The Research, Development, and Acquisition (RDA) domain uses OneSAF for acquisition analyses focused on equipping and supporting currently fielded and future forces. The Training, Exercises, and Military Operations (TEMO) domain employs simulations to train the force using live simulation (actual equipment on training ranges), virtual simulation (immersing Soldiers into a synthetic environment), and constructive simulation (war games using CGF) (Surdu & Parsons, 2006).

OneSAF will replace several existing simulations and/or the CGF in simulations: Brigade/Battalion Battle Simulation (BBS), Janus, Close Combat Tactical Trainer (CCTT), Aviation Combined Arms Tactical Trainer (AVCATT), and the urban operations capabilities of the Joint Conflict and Tactical Simulation (JCATS). In addition, OneSAF was planned to be part of the embedded training common components for the Future Combat Systems (PEO STRI, 2007).

Integral to the OneSAF simulation is the CGF model that provides intelligent, doctrinally-correct behaviors representing the force at the entity and unit level. The simulation provides a unique ability to model unit behaviors from fire team to Brigade level for all units across the spectrum of military operations in the contemporary operating environment. The simulation has the capability to model multiple opposing, friendly, unknown, and neutral sides and forces, with asymmetric side relationships, in order to more accurately reflect the contemporary operating environment. As an example, in OneSAF it is possible to model two tribes that are both friendly to a side or force, but are enemies toward each other. In addition, OneSAF can model a side that the friendly force sees as unknown on the battlefield, but the side behaves as though it is an enemy of the friendly force (PEO STRI, 2007). These relationships are defined by the scenario developer.

OneSAF is frequently updated and enhanced by PEO-STRI. The User Guide documented in this report supports OneSAF v2, released in 2008. The current version is OneSAF v3, released in 2009.

Development of OneSAF v2.0 User Guide

James, Dyer and Wampler (2008) investigated the potential of OneSAF to be a planning tool for officers at the platoon and/or company level. Officers (majors and captains) were trained on the basics of OneSAF by an instructor in a classroom environment and then developed functional OneSAF scenarios. To support the training process, a "Quick Start Guide" was produced as a tool to assist the officers during the instructional process and as a reference when they created their own scenarios. OneSAF v1 was used in this research.

A more detailed guide for OneSAF v2.0 was created to enable individuals to use OneSAF for leader planning and course of action analysis. The intended audience was first-time users, such as ARI researchers and other individuals who would plan and build scenarios for company operations and below, and had never worked with OneSAF. For several reasons, the Quick Start Guide for OneSAF v 1.0 was not adequate for this purpose. First, version 2.0 of OneSAF was a substantial increase in capabilities and functions over version 1.0. Second, the Quick Start Guide was developed to assist an instructor, not as a stand-alone guide where "all" the information was presented to enable a user to create a scenario. Third, on-line guidance on OneSAF (Bowman, et al., 2008) required an instructor and did not provide sufficient information for a user who was not a software programmer and was unfamiliar with prior versions of OneSAF.

The OneSAF v2 User Guide that was developed is at Appendix B[1], and was created by the same individual who developed the Quick Start Guide. Lessons learned in what officers needed to know and where confusions were likely to occur in applying OneSAF influenced the organization and content of the current User Guide. The purpose of each function was presented, followed by step-by-step procedures supplemented with extensive screen shots. An overview of the contents of the User Guide is presented below. The User Guide focused on operations at the platoon and company echelons.

Chapter 1, *Introduction,* is a brief introduction to OneSAF, followed by an outline of the content, and conventions used throughout the User Guide to explain the steps and procedures.

Chapter 2, *OneSAF Workspaces,* focuses on the major interfaces or workspaces within the software. The intent was to provide the new user with an overall concept of what is involved in creating and running a scenario. The primary workspaces presented are the Management Control Tool (MCT) tool bar, and four MCT windows (Plan View Display of the terrain, Mission Editor, Status, and Task Organization). The relationship of each to mission planning is outlined. Lastly, the steps in starting a scenario are presented. The User Guide is limited to the MCT and the stand-alone mode of operation. No information is presented on other OneSAF workspaces, specifically the Military Scenario Development Environment, Power STRIPES After Action Review, and the AcuScene OneSAF Stealth Window.

Chapter 3, *Start-Up, Save, Stopping and Reloading, and Shut Down Procedures,* documents the required steps for these procedures.

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[1] A copy of the User Guide (CD-ROM) can be obtained from the ARI Research Unit at Ft. Benning, GA. The page numbers in Appendix B are specific to the User Guide itself rather to this report.

Chapter 4, *Creating a Basic Scenario,* presents the basic information required to create a platoon or company-level scenario in OneSAF. The information includes how to load the desired terrain data base, and to select and task organize the forces, units, and entities represented in the scenario (friendly, insurgent, civilians, etc.). The control measures available, how they are created, and how they can be used within a scenario are described. How to assign and specify the desired behaviors that units and entities should execute in accordance with the plan are described using a very common behavior, *Move Tactically.* OneSAF behaviors are basically equivalent to collective and individual tasks and are central to scenario execution. The last procedures are how to run, stop and reset scenarios.

Chapter 5, *Behaviors,* elaborates on the behaviors or tasks available within OneSAF, their associated parameters both required and optional, and the variations allowed in these behaviors. Common unit and entity behaviors, other than *Move Tactically,* are presented.

Chapter 6, *Example Scenario*, shows how development of a tactical plan relates to OneSAF features and capabilities. The example OneSAF scenario is based on a tactical plan depicting an Infantry company team attack scenario on National Training Center terrain.

Appendixes A through H. In general, these appendixes include additional information useful to OneSAF operators. This supplemental information was not included in the prior chapters in order to present the basics in those chapters. For example, more information is presented on using the Status Window, and on adding sides and defining side relationships. Other OneSAF features very useful in planning and developing a scenario are described: line of sight tools, distance tools, and controlling the layers of information on the map display. Also included is the use of ultra high resolution buildings which enables the user to see the inside of buildings, to place entities at a specific location within a building, and to monitor actions within a building while the scenario runs. These appendixes include a master list of available behaviors (hostile, friendly, noncombatant, platoon, company) plus a master list of control measures.

Assessment of the User Guide

It was important to have a formative assessment of whether the User Guide material was complete, appropriate, and clearly presented for new users. Experts in using OneSAF were needed to make these evaluations. This report documents the results of that assessment and the User Guide (Appendix B).

Method

Participants

Subject matter experts from the Maneuver Battle Lab (MBL) at Fort Benning, Georgia reviewed the User Guide. The MBL was selected because of its long history of working with

OneSAF. It was a beta test site for OneSAF prior to its initial release and continues to test updates to OneSAF before formal release of the next version.

A total of seven personnel from the MBL participated in the assessment of the OneSAFv2.0 User Guide. They reviewed the User Guide, and then completed a survey on the OneSAF features they typically had used and questions on the appropriateness and adequacy of the User Guide. All participants had extensive experience using OneSAF in a variety of positions. The positions they held when using OneSAF were Threat Commander, Node Boss/Analyst, Database Manager, Simulation Integration Specialist, two Battle-Masters, and an Operational Analyst. Their average time in their duty position was 27 months with a range of four to 72 months. Their duties and roles ranged from the development of OneSAF scenarios to primary and assistant instructors for OneSAF in support of MBL projects.

OneSAF Survey

The OneSAF survey (see Appendix A) had two parts. Part I focused on the participants' experience with OneSAF. The first three questions were biographical in nature. The next two questions focused on the participants' experience using OneSAF in specific MBL projects. First they were asked to list each project, identify the software version of OneSAF used for the project, and specify the military echelon (brigade, battalion, or company level) use in the project. Then they were asked to identify the mode(s) (stand-alone and/or distributed) they had used.

The last series of questions in Part I focused on specific OneSAF functions covered in the User Guide. The participants were asked to consider all versions of OneSAF they had used when answering each question. The OneSAF functions were related to echelon, Task Organization window, map-related functions, graphical control measures, Status window usage, Mission Editor window, and tasks/behaviors.

Part II of the survey gauged the participants' reaction to the User Guide as an aid to help OneSAF users. General questions focused on information, presentation, and organization of the User Guide, while the remainder of the survey was on clarity of information presented on specific OneSAF functions and features, as well as adequacy of the information for a new user. The appropriateness of OneSAF behaviors included in the User Guide was also assessed.

Procedure

Each participant had a complete copy of the User Guide. After reviewing it, each completed the survey. Participants did the review and completed the survey over a period of days, as the work schedule allowed.

Results

The survey results are presented in two sections: MBL projects where OneSAF was used along with the participant's level of experience with OneSAF functions and features, followed by the participants' reactions to the User Guide. The responses for questions related to the "number of projects” scales were collapsed from a seven-point scale (0, 1, 2, 3, 4, 5, >5) to a three-point scale (0, 1-3, >=4). No information was lost with this change.

Use of OneSAF in Maneuver Battle Lab Projects

Information on the MBL project, OneSAF software version, and military echelon level was collected to identify the variety and scope of use by the participants as this could influence their perceptions of the OneSAF User Guide. The participants’ experience was extensive. On average they used OneSAF in 5.8 projects, ranging from 4 to 7 projects per participant. One participant did not indicate the version of OneSAF used or the highest echelon of each OneSAF application. Of the remaining six participants, all six indicated they had used version 2.0/2.1, and four each indicated they had used versions 1.0 and 1.5. One participant had used version 1.02. All six had applied OneSAF at the brigade and company levels, and five had applied OneSAF at the battalion level. The mean number of times these participants used OneSAF at each level was two. Additionally, the seven participants responded that they had used OneSAF in both the stand-alone and distributed (networked) mode.

Table 1 displays the echelons at which the participants typically used OneSAF. The most common application was at company level (86% of the participants). In addition, about half commonly applied OneSAF at the brigade, battalion and platoon levels. On the other hand, slightly less than half indicated they typically did not work at the battalion and platoon echelons.

Table 1
Typical Echelon Where OneSAF was Used

Regardless of the highest echelon used in the OneSAF projects listed previously, with which echelon(s) were you *typically* involved in each project? If you worked at more than one echelon in a project, *mark all that* apply.	% Participants by Number of Projects and Echelon of Project		
	Not Typically Used	1 to 3 projects	4 or more projects
Brigade	14%	57%	29%
Battalion	43%	57%	0%
Company	14%	86%	0%
Platoon	43%	43%	14%

OneSAF Functions and Features

The OneSAF functions and features assist in developing scenarios at different levels. The functions and features addressed in the survey were Task Organization window functions, map-related functions, graphical control measures (point, linear, and area), Status window functions, Mission Editor window functions, and tasks/behavior features that are commonly used during maneuver company team operations. The participants indicated the number of projects they were involved in that required them to use these functions and features.

Task Organization window functions. When planning for a military operation, the planner uses a series of military decision-making steps that require development of friendly, enemy, or non-combatant organizations. OneSAF has the capability to replicate units or organizations that are commonly found in military operations. In Table 2 are the primary functions and procedures for specifying organizations in a OneSAF scenario that were addressed in the survey. The participants cited the number of projects where they had used each of these functions. At least half the respondents indicated they had created or modified a task organization for friendly, insurgents, or civilian elements in one or more projects; while one to two respondents indicated four or more projects. Half the respondents indicated they never created a task organization without modifications, possibly signifying that the standard unit organizations within the OneSAF database should more closely replicate the current organization of military units.

Table 2
Use of Task Organization Window Functions and Procedures

On how many Battle Lab projects did you use the following OneSAF Task Organization functions/ procedures?	% Participants Using Task Organization Functions by Number of Projects		
	0	1 to 3	4 or More
• Created a task organization for civilians	14%	71%	14%
• Created a task organization for insurgents	14%	57%	29%
• Assigned forces specific names - replaced default names of forces with specific names	14%	57%	29%
• Created a friendly task organization that was a modification to the data base structure (e.g., create company team or battalion task force, a combined arms unit, not at full strength)	29%	43%	29%
• Defined side relationships (more than 2 default sides) [a]	0%	60%	40%
• Created a friendly task organization with no modifications to the data base structure	57%	43%	0%
• Added a side [a]	40%	60%	0%

[a] Missing data from 2 participants. Percentages based on an *n* of 5.

Map-related functions. OneSAF uses a two-dimensional feature named a Plan View Display (PVD) as the primary graphical interface. The PVD replicates a map with a series of overlays that can be toggled on or off. The map allows the user to place and move units from and to designated locations, create control measures to facilitate the movement and the control of units, display the inside floors of buildings, and to measure distances and lines of sight. As the primary interface, the PVD is how the user watches the scenario unfold and requires the most interaction with the user.

As seen in Table 3, all participants stated they had used all seven functions in one or more projects, with the preponderance using the functions in four or more projects. The distance tool, and line and area of sight tools were used most frequently. One participant also indicated use of the navigation button function and another cited using the change floor levels on the Ultra High Resolution Building (UHRB) function in several projects.

Table 3
Use of Map-Related Functions

OneSAF Map-related Functions?	% Participants Using Map Functions by Number of Projects	
	1 to 3	4 or More
• Used distance tool	14%	86%
• Used line of sight tool	14%	86%
• Used area of sight tool	14%	86%
• Placed units on the map	29%	71%
• Moved units from their original location	29%	71%
• Created control measures	29%	71%
• Placed unit or individuals in ultra-high resolution buildings (UHRBs)	29%	71%
Other common map functions: *Navigation button* (1 participant on 3 projects); *Change floor levels on UHRBs* (1 participant on 5 projects)		

Note. No participant indicated never using these seven map-related functions.

Graphic control measures. Graphic control measures are applied to the PVD map to control unit movements, actions, or events. There are three types of control measures; point, linear, and area. The participants were asked to list the most common ones they had used. The most common point control measures identified were *Check Point* (4 participants), *Target Reference Point* (4 participants) and *Release Point* (1 participant). The most common linear control measures were *Phase Lines* and *Boundaries* (3 participants). The most common area control measures were *Assembly Area* (4 participants), *Battle Positions* (3 participants), and *Objectives* (2 participants).

Status window functions. The Status window is the software interface that focuses on the logistics functions of the simulation. OneSAF has many capabilities, some of which are adjusting personnel strength, ammunition, fuel loads, and locations. The participants were asked to describe how they typically used the Status window. The most common response was to verify the different classes of supply (Class 1 – Subsistence [3 participants], Class 3 – Petroleum, Oil, and Lubricants [4 participants], and Class 5 – Ammunition [4 participants]). Also cited was using the Status window to bring entities back to life, verifying the systems available, and making modifications by changing the capacity or authorized amount of specific items.

Mission Editor window functions. The Mission Editor window most closely replicates a format used in the military decision-making process (MDMP). This window is formatted similar to a Microsoft Excel Spreadsheet ™ and is used to synchronize and execute tasks and behaviors for units and individuals in the simulation. It is also used to implement the military operation as determined in the MDMP. The synchronization and execution matrices developed during the MDMP can be input into the Mission Editor window as a series of executable tasks and behaviors.

To gauge the experience of the participants in the use of the Mission Editor window, they were asked what their typical level of responsibility was in the conceptual development of the plan for the scenario prior to working with the Mission Editor. They were given three options: responsible for the overall plan; responsible for only a phase of the plan; and not responsible for any part of the plan prior to working with the Mission Editor. Two participants indicated they were responsible for the overall plan; two said they were responsible for only a phase of the plan; and three said they were not responsible for any part of the plan.

Additionally, the participants were asked on how many MBL projects they used certain Mission Editor functions. Table 4 below lists the Mission Editor functions and the participants' responses.

Table 4
Use of Mission Editor Window Functions

OneSAF Mission Editor Window Functions	% Participants Using Missing Editor Functions by Number of Projects		
	0	1 to 3	4 or More
• Planned and created a single mission table (including subordinate phases)	0%	14%	86%
• Planned and created more than one mission table	0%	14%	86%
• Created a mission table (including subordinate phases) in response to guidance from a scenario planner	14%	14%	71%
• Debugged errors in mission table(s)/phase(s) [a]	33%	0%	67%
• Created more than one mission table in response to guidance from a scenario planner	43%	14%	43%
• Used different triggers to initiate behaviors	43%	14%	43%
Other common Mission Editor functions that were cited. *Remove filters to view nodes (default); view selected (displays selected nodes/elements)* (1 participant on 3 projects); *Copy/paste behaviors* (1 participant on 5 projects)			

[a] Missing data. Percentages based on 6 participants.

All participants responded that they had planned and created single or multiple mission tables at least once, with six of the seven participants responding that they had planned and created one or more mission tables in four or more projects. Two participants stated they had also used the "Remove Filters," View Selected." and "Copy/Paste" functions in several projects.

Tasks and behaviors. One unique feature available in OneSAF is doctrinally correct tasks and behaviors modeled after individual and collective military tasks. The OneSAF database lists tasks and behaviors that can be applied from the individual to a brigade-sized unit. The complexity of each task and behavior determines the size of the element required to perform it. Table 5 displays a partial list of commonly used tasks and behaviors available at the maneuver company team level and below. The complete list of tasks and behaviors is in Appendix G of the User Guide. The participants were asked to respond to the question "On how many Battle Lab projects did you assign the following OneSAF tasks/behaviors to an entity (individual) or a unit?"

Table 5
Use of OneSAF Tasks and Behaviors

OneSAF Tasks and Behaviors?	% Participants Using OneSAF Behaviors by Number of Projects		
	0	1 to 3	4 or More
• Move tactically	0%	0%	100%
• Mount/dismount (Magic mount/dismount)	0%	0%	100%
• Hitch/unhitch (Magic hitch/unhitch)	0%	29%	71%
• Assault building (room)	0%	29%	71%
• Attack by fire	0%	29%	71%
• Clear room [a]	0%	20%	80%
• Issue fire order	14%	43%	43%
• Assault buildings in area [b]	17%	33%	50%
• Occupy position [b]	0%	33%	67%
• UAV conduct surveillance	29%	43%	29%
• Support by fire	43%	29%	29%
• Maneuver and occupy fire support position [b c]	17%	33%	50%
• Conduct checkpoints	43%	29%	29%
• Detonate self	29%	57%	14%
• Construct HVIED (Suicide bomber)	29%	57%	14%
• Emplace or displace ground sensor system [c]	29%	57%	14%
• Emplace explosives	43%	43%	14%
• RWA move tactically	57%	29%	14%
• Cross level supplies [b c]	50%	33%	17%
• Conduct MEDEVAC [c]	29%	71%	0%
• Construct obstacle [c]	29%	71%	0%
• Emplace minefield [b]	43%	57%	0%
• Conduct raid	71%	29%	0%
• Unconventional infiltration	71%	29%	0%
• Disperse randomly	71%	29%	0%
• RWA conduct entity MEDEVAC [b c]	67%	33%	0%
• Send medical unit Sitrep [c]	86%	14%	0%
• Send situation message [c]	83%	17%	0%
• Combined arms breach [c]	83%	17%	0%
Additional behaviors used: *Fire Weapon* (1 participant more than 6 projects).			

[a] Missing data; percentages based on 5 participants.

[b] Missing data, percentages based on 6 participants.

[c] Tasks that apply to maneuver company team operations; not in Chapter 5 of the User Guide on behaviors.

The tasks in Table 5 are displayed in sequence of most to least used. All participants used *"Move Tactically"* and *"Mount/Dismount (Magic Mount/Dismount)"* extensively, that is, in four or more projects. All participants also used "*Hitch/Unhitch,*" *"Assault Building*," and "*Attack by Fire*" in at least one project; 71% in four or more projects. The least used tasks and behaviors were "*Send Situation Message,*" *"Combined Arms Breach,"* and "*Send Medical Unit SITREP*." *"Fire Weapon*" was a write-in response from one participant who used the behavior in four or more projects. This particular action is used more as a point-and-click intervention than a detailed task or behavior and led to the inclusion of an additional section in the User Guide on executing interventions in OneSAF.

Participant's Reactions to the OneSAF v2.0 User Guide

Part II of the survey was related to the participants' reactions to the OneSAF User Guide as an aid to help OneSAF users. The participants assessed the value of the User Guide as an aid to a new OneSAF user. New user referred to an individual with a military background who would develop scenarios at the company level and below but had no prior experience with OneSAF. The first group of questions was general in nature and focused on the User Guide's information, explanation, presentation, visualization, and organization. The next group of questions was more specific to OneSAF features, functions, and procedures. The last questions were on OneSAF behaviors and areas in the User Guide that needed deleting, improving, or were helpful.

General Questions

Sufficient information. Six participants responded to the first question. Five (83%) indicated there was "sufficient information" in the User Guide to allow a new user with a military background develop a simple scenario. One participant thought that there was *"*incomplete information*"* and wrote that simple scenarios must be checked and approved for proper construction.

Explanation, presentation, visualization. The second through fourth questions assessed the clarity of information as it related to the explanation of the purpose of OneSAF, presentation of major OneSAF window interfaces, and visualization of OneSAF interfaces. Major windows refer to the PVD, Mission Editor, Task Organization, Status, and MCT. The majority (86%) indicated that the explanation of the purpose and the initial presentation of the major OneSAF windows were clear in the User Guide. All indicated there were sufficient screen displays of the OneSAF interfaces to describe and explain the OneSAF features.

Organization. Six of the seven participants agreed that the User Guide was organized to enable a new user to understand how to develop a scenario. One participant recommended the removal of the "mouse lock" mode explanation because no one had been observed to use it.

OneSAF Features, Functions, and Procedures

The survey contained a series of questions that asked the participants to rate the User Guide on two dimensions. The first dimension was the clarity of the information presented on specific OneSAF functions and features. The second dimension was if the information was adequate for a new user. (Adequacy was clarified as - *Does it contain the core of what a new user needs to know to execute a particular feature? Adequate information does not necessarily imply "complete information," that is it may be judged as adequate even though it does not contain every detail about the feature).* The response format for adequacy and clarity was "Yes" or "No." The questions were divided into key OneSAF functions and features focusing on the Task Organization, Status, and Mission Editor windows plus map features and control measures.

Task Organization window functions. The Task Organization window defines the organizations being simulated in the area of operations. This window is the area in which you create, identify, edit, and select the entity (an individual), unit (at least two individuals), force, and side. The window allows you to select multiple sides and assign up to 27 different doctrines in addition to setting the side relationships from friendly to hostile to neutral to unknown.

Table 6 lists the major functions described in the User Guide. As indicated, the majority (83% or more) of the participants rated the information on the Task Organization functions and procedures as clear. The majority (86% or greater) indicated there was adequate information on the first four functions cited in Table 6. However, fewer participants (57%) indicated there was adequate information for *"Creating a task organization with no modifications," "Defining side relationships,"* and *"Creating a friendly task organization that modifies the database."* No specific explanations were given as to why this information was judged to be inadequate. However, one participant did state that the User Guide was clear because of one year of experience with OneSAF, and that it might not be as clear to a new user. It is also noted that creating a task organization with v2 of OneSAF can be complicated and potentially confusing as the nomenclature for units does not necessarily follow Army doctrine.

Table 6
Ratings of OneSAF User Guide Descriptions of Task Organization Functions and Procedures

OneSAF Task Organization Functions and Procedures	% Participants with Ratings of Clear and Adequate	
	Clear?	Adequate?
• Create a task organization for civilians	100%[a]	100%
• Add a side	100%	100%[a]
• Create a task organization for insurgents	100%[a]	86%
• Assign forces specific names - replace default names of forces with specific names	83%[a]	86%
• Create a friendly task organization with no modifications to the data base structure	83%[a]	57%
• Define side relationships (more than 2 default sides)	100%[b]	57%[a]
• Create a friendly task organization that modifies the data base structure (e.g., create attachments, company team or battalion task force, a combined arms unit, not at full strength)	83%[a]	57%

[a] Missing data. Percentages based on an *n* of 6.
[b] Missing data. Percentages based on an *n* of 5.

Map-related features. Seven map-related features and tools were covered in the User Guide. These features were:

- Place units on the map
- Move units from original location
- Create control measures
- Place force in ultra-high resolution buildings (UHRBs)
- Use distance tool
- Use line of sight tool
- Use area of sight tool

As indicated in Table 3, these map-related features were used extensively by all participants during the MBL projects. All participants indicated the description of each feature was clear and adequate.

Control measures. The OneSAF software uses graphical control measures to control the movement and actions of entities and units during the simulation. The User Guide demonstrated how to place, modify, move, and delete three basic control measures: point, linear, and area control measures. The steps taught for these three measures apply whenever other control measures are emplaced. All participants indicated the description of each control measure was clear and adequate. One participant responded that the "by the numbers" technique used in the User Guide was a very good technique when explaining the steps.

Status window functions. The Status window has multiple purposes. It is used to display entity or unit status, edit basic load or cargo, change location and heading of units, redefine the name and command relationship of units, or in the case of a vehicle entity, determine vehicle passengers. The Status window is populated with the information for the selected entity through the properties command in the pop-up windows of the Task Organization or Mission Editor. The User Guide explained the how-to process for the functions listed in Table 7. Participants who responded indicated that all information was clear. The information was also perceived to be adequate with the exception of *"Changing Basic Load"* and *"Naming Units or Entities"* where one individual indicated not adequate. No comments were made regarding why the information was perceived as not adequate.

Table 7

Ratings of OneSAF User Guide Descriptions of Status Window Functions

OneSAF Status Window Functions	% Participants with Ratings of Clear and Adequate	
	Clear?	Adequate?
• Moving "passengers" to different vehicles	100%[a]	100%
• Moving vehicles/entities on the map	100%[a]	100%
• Naming units or entities	100%[a]	86%
• Changing basic load	100%	83%[a]

[a] Missing data. Percentages based on an *n* of 6.

Mission Editor window functions. The Mission Editor window, modeled after an Excel spreadsheet, can be used as a synchronization matrix to plan missions and tasks, and then as an execution matrix to execute the plan. Table 8 lists the functions covered in the User Guide. All participants who responded indicated the information was clear. Some participants indicated the information on two functions, *"Initiating behaviors with different triggers"* and *"Debugging errors in a mission table,"* was inadequate. No reasons were provided for the inadequate rating, although the "debugging" process can be difficult as there are no direct cues that tell the OneSAF user the source of the problem when a phase of the scenario does not run.

Table 8

Ratings of OneSAF User Guide Descriptions of Mission Editor Window Functions

OneSAF Mission Editor Functions	% of Participants with Ratings of Clear and Adequate	
	Clear?	Adequate?
• Creating a single mission table (including subordinate phases)	100%	100%[a]
• Assigning common behaviors (e.g., move tactically, clear building) to units and/or entities	100%	100%[a]
• Creating several mission tables in the desired sequence	100%	100%[a]
• Using other Mission Editor functions such as copy, filters, etc.	100%[a]	100%
• Using triggers to initiate mission phases	100%[a]	100%
• Using different triggers to initiate behaviors	100%	83%[a]
• Debugging errors in mission table(s)/phase(s)	100%[a]	71%

[a] Missing data. Percentages based on an *n* of 6.

Tasks and behaviors. OneSAF behaviors are a series of commands that control the actions of entities and units. The list of behaviors available for each entity and unit is based on their size and side relationship. However, they can cross sides and be available for assignment to hostile, friendly, neutral, or unknown sides. Table 9 lists the behaviors described in the User Guide. The participants marked ("Yes" or "No" response format) the ones they believed were appropriate to include in a guide designed for helping users develop company-team and platoon scenarios in the stand-alone mode. Additionally, they were asked to list any other behaviors they thought should be included.

All participants indicated that 15 of 18 behaviors were appropriate for inclusion in the User Guide. Behaviors that were not viewed as appropriate by some participants were *"Conduct Raid," "Unconventional Infiltration,"* and *"Disperse Randomly."* One participant stated the *"Conduct Raid"* behavior would "probably work," if the unit moved to its location with no casualties. Another indicated that the *"Unconventional Infiltration"* behavior had too many required fields and that the preference was to use the "*Move Tactically*" command instead. In addition, one participant indicated that "*Emplace Minefield*," *Construct HVIED*" and *Emplace Explosives*" were appropriate, but still needed work. It is not clear whether this comment pertained to the OneSAF software or to the adequacy of the information in the User Guide. The participants listed eight different behaviors they thought should be added to the Guide: *"Occupy*

Position," "Occupy Attack by Fire," "Follow Vehicle/Leader," "Fire Weapon," "Dig-In," "Construct IED/EFP," "Detonate IED/EFP," and *"Move to Location."*

Table 9
Ratings of OneSAF Behaviors Described in the User Guide

Behaviors	% Participants Stating Behavior was Appropriate for User Guide
• Assault building	100%
• Assault buildings in area	100%
• Clear building (room)	100%
• Conduct checkpoint	100%
• Emplace minefield	100%
• Issue fire order	100%
• Support by fire	100%
• Construct HVIED (Suicide bomber)	100%
• Detonate self	100%
• Emplace explosives	100%
• Hitch/unhitch (Magic hitch/unhitch)	100%
• Mount/dismount (Magic mount/dismount)	100%
• RWA move tactically	100%
• UAV conduct surveillance	100%
• Move tactically	100%[a]
• Conduct raid	71%[c]
• Disperse randomly	71%[b][c]
• Unconventional infiltration	71%[c]
Other behaviors to add. *Occupy Position, Occupy Attack by Fire, Follow Vehicle/Leader, Fire Weapon, Move to Location, Dig-In, Construct IED/EFP, Detonate IED/EFP*	

[a] Missing data. Percentages based on an *n* of 5.
[b] Missing data. Percentages based on an *n* of 6.
[c] One participant responded "N/A." This was assumed to indicate "not applicable" and was interpreted as meaning the behavior was not appropriate for the User Guide.

User Guide deletions, improvements, and value. The last questions were open-ended questions that asked the participants to comment on the sections of the User Guide that could be deleted, improved, or were particularly valuable or helpful. The participants indicated that nothing in the User Guide should be deleted and that it was well put together and could teach the an individual who was not a software engineer how to use OneSAF properly. The comments concerning the improvement of the User Guide related to its implementation and usage. One participant commented that a truer test of the User Guide would be to use someone with no military background and monitor their progress as they applied the steps. Another comment focused on switching Chapters 2 (OneSAF Workspaces) and 3 (Start-up, Save, Stopping and

Reloading, and Shut Down Procedures) to more readily apply the crawl-walk-run theory of training.

Changes to the User Guide

As a result of the feedback from the MBL, selected changes were made to the User Guide. Two behaviors were added to Chapter 5: "*Occupy Position*" and "*Attack by Fire*." Other suggested behaviors *"Construct IED/EFP," "Detonate IED/EFP," "Follow Vehicle/Leader,"* and *"Dig-In,"* are not available as behaviors or interventions in OneSAF version 2.0 and were not added. The participants identified *"Fire Weapon"* and *"Move to Location"* as behaviors to add. However, these are actually interventions and were added in a section on executing interventions included in Chapter 5 of the User Guide. Interventions are commands that can be used while the scenario is running, allowing the user to deviate from the proscribed plan. Interventions allow the user to assign simple behaviors (e.g., "Move to Point," "Fire Direct," "Slow Down," "Speed Up") in order to modify entity or unit behavior without modifying the Mission Editor. There were minor changes made in the body of the text in the section that explains how to develop a Task Organization. The changes emphasized the two procedural steps required to modify an organization. The order of Chapters 2 and 3 was not changed, as Chapter 2 provided the initial conceptual overview of the structure of the OneSAF simulation.

Conclusions

The MBL individuals who reviewed the User Guide were experienced users, and thus were able to provide valuable feedback based on a thorough understanding of OneSAF. In general, their comments were very positive, indicating the information was clear and adequate, with few changes suggested. The functions which were perceived as being the least clear and adequate were some Task Organization window functions and Mission Editor window de-bugging steps; specifically functions that required the user to create more complicated organizations that deviated from default settings and procedural steps that explained how to remedy Mission Editor problems. For example, one such function was creating a friendly task organization that was a modification to the data base structure such as attachments, a task force, or a unit that was less than full strength. Another example was the lack of procedural steps associated with de-bugging errors in the Mission Editor window. OneSAF v2.0 has an *"Alert"* window that identifies the general error, but nothing specific to assist the user in identifying and rectifying the problem. De-bugging Mission Editor problems in OneSAF v2.0 requires more of a trial-by-error process than specific instructions.

As stated, one purpose for developing the User Guide was to have an in-house OneSAF guide so ARI scientists could use OneSAF in conducting leader-related research and other simulation efforts. Although the User Guide was judged as sufficiently detailed to enable a scientist to execute the steps appropriately, the authors realized during the project that substantial military knowledge, both technical and tactical, was needed as well to develop scenarios. Technical knowledge is needed to define the parameters associated with tasks and behaviors, such as the structure of different types of organization, the nomenclature of units, vehicles, weapons, and munitions, the characteristics and capabilities of weapon and vehicle systems, vehicle load plans and basic loads, etc. In addition, the scientists need tactical knowledge and expertise to control and develop appropriate plans and to sequence the tasks/behaviors at the desired times within a mission. Consequently the potential use of OneSAF as an in-house research tool is dependent on the military tactical and technical knowledge possessed by the ARI scientist.

The User Guide was also developed to support first-time users of OneSAF with military knowledge who would develop scenarios at the maneuver platoon and company echelons. The reactions by the MBL participants indicated that the User Guide could be used for this purpose. In fact, the Director of the MBL requested that they use the User Guide to train new members within their laboratory as the documentation filled a training gap.

The User Guide fully illustrates the core functions and steps necessary to create scenarios at the platoon and company level. It was not designed to cover all OneSAF functions, capabilities, and applications, nor was it designed to assist experienced software engineers. The detailed step-by-step, illustrated mode of presentation was designed to help first-time users of OneSAF and can serve as a prototype for guides that support future versions of OneSAF.

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Appendix A

OneSAF SURVEY

Part I: Experience with OneSAF

IF YOU HAVE NEVER USED OneSAF, PLEASE DO NOT COMPLETE THIS SURVEY.

Duty Position ________________________________

Time in duty position: _______years

Briefly describe your duties and roles regarding simulations at the Battle Lab.

1. List below the Battle Lab projects where you have used OneSAF.
[A project refers to an experiment such as AAEF07 where OneSAF was used or beta testing of a version of OneSAF. Consider all versions of OneSAF you have used.]

Also indicate the **OneSAF version** that was used in each project, and the **highest** level of simulation used in each project.

1a. Name of Battle Lab Project	1b. Version of One SAF (check ✓ one)				1c. Echelon (check ✓ one)		
	1.0	**1.5**	**2.0/2.1**	**Other**	**Bde**	**Bn**	**Co**

2. In which mode(s) have you used OneSAF? (check (✓) all that apply).
___ a. Stand-alone
___ b. Distributed

For questions 3 through 12, consider ALL the versions of OneSAF you have used.

3. Regardless of the highest echelon used in the OneSAF projects you listed in Question 1, with which echelon(s) were you ***typically*** involved? If you worked at more than one echelon in a project, **mark all** that apply.	# of Projects (Check ✓ one column)						
	0	**1**	**2**	**3**	**4**	**5**	**>5**
a. Brigade							
b. Battalion							
c. Company							
d. Platoon							

4. On how many Battle Lab projects did you use the following OneSAF **task organization** functions/ procedures?	# of Projects (Check ✓ one column)						
	0	**1**	**2**	**3**	**4**	**5**	**>5**
a. Created a friendly task organization with no modifications to the data base structure							
b. Created a friendly task organization that was a modification to the data base structure (e.g., created company team or battalion task force, a combined arms unit, not at full strength)							
c. Created a task organization for insurgents							
d. Created a task organization for civilians							
e. Assigned forces specific names - replaced default names of forces with specific names							
f. Added a side							
g. Defined side relationships (more than 2 default sides)							

5. On how many Battle Lab projects did you use the following OneSAF **map-related functions**?	# of Projects (Check ✓ one column)						
	0	**1**	**2**	**3**	**4**	**5**	**>5**
a. Placed units on the map							
b. Moved units from their original location							
c. Created control measures							
d. Placed unit or individuals in ultra-high resolution buildings (UHRBs)							
e. Used distance tool							
f. Used line-of-sight tool							
g. Used area-of-sight tool							
h. Other common map functions: describe							

6. Have you used point control measures? Yes No (Circle answer)

If Yes, please cite the most common ones you have used.
____

7. Have you used linear control measures? Yes No (Circle answer)

If Yes, please cite the most common ones you have used.
____

8. Have you used area control measures? Yes No (Circle answer)

If Yes, please cite the most common ones you have used.
____

9. Did you use the Status Window to vary personnel strength, ammunition, or fuel; to name units; to move units, etc.? Yes No (Circle answer)

If Yes, describe how you typically used the Status Window.
____

10. What was your typical level of responsibility in the *conceptual development* of the plan for the scenario **prior** to working with the Mission Editor? (check one)

___ a. Responsible for the overall plan
___ b. Responsible for only a phase of the plan
If you checked option b, describe which phase(s) for which you were typically responsible (e.g., assembly, movement, insurgent behaviors, indirect fire, dismounted actions) ____

___ c. Not responsible for any part of the plan prior to working with Mission Editor

11. On how many Battle Lab projects did you use the following OneSAF **Mission Editor** functions?	# of Projects (Check ✓ one column)						
	0	**1**	**2**	**3**	**4**	**5**	**>5**
a. Planned and created a single mission table (including subordinate phases)							
b. Created a mission table (including subordinate phases) in response to guidance from a scenario planner							
c. Planned and created more than one mission table							
d. Created more than one mission table in response to guidance from a scenario planner							
e. Used different triggers to initiate behaviors							
f. Debugged errors in mission table(s)/phase(s)							
g. Other common Mission Editor functions used Describe each.							

12. On how many Battle Lab projects did you assign the following OneSAF **tasks/behaviors** to an entity or a unit?	# of Projects (Check ✓ one column)						
	0	**1**	**2**	**3**	**4**	**5**	**>5**
a. Move tactically							
b. RWA move tactically							
c. Mount/dismount (Magic mount/dismount)							
d. Hitch/unhitch (Magic hitch/unhitch)							
e. Emplace explosives							
f. Emplace minefield							
g. Assault building							
h. Assault buildings in area							
i. Clear room							
j. Conduct raid							
k. Conduct checkpoints							
l. Issue fire order							
m. Support by fire							
n. Detonate self							
o. Construct HVIED (Suicide bomber)							
p. UAV conduct surveillance							
q. Unconventional infiltration							
r. Disperse randomly							
s. Attack by fire							
t. RWA conduct entity MEDEVAC							
u. Conduct MEDEVAC							
v. Send medical unit Sitrep							
w. Send situation message							
x. Maneuver and occupy fire support position							
y. Construct obstacle							
z. Combined arms breach							
aa. Occupy position							
bb. Emplace or displace ground sensor system							
cc. Cross level supplies							
Write in any additional behaviors you have often used and indicate the frequency of use.							

Part II: Reactions to OneSAF v2 User Guide

Part II is on your reactions to the OneSAF Guide as an aid to help OneSAF users.

The Guide was developed for using OneSAF in the stand-alone mode. Therefore there is no information in Guide about the distributed mode and there are no survey questions on the distributed mode.
It was also developed for scenarios that apply primarily to company size units.

General Questions

1. In general, was there sufficient information in the Guide to allow a new user, who has a military background, to develop a simple scenario? [*New user* is defined as an individual or small-unit leader who would plan/build scenarios for company operations and below.]
____ a. Sufficient information
____ b. Incomplete information
____ c. Confusing information

If you marked b or c, what changes would you recommend?

2. Is the explanation of the purpose of OneSAF clear in the Guide?
___ a. Yes - No substantial changes needed
___ b. Satisfactory – but needs improvement
____ c. No, inadequate and should be revised.

If you marked b or c, what changes would you recommend?

3. Is the initial presentation of the major OneSAF windows in Chapter 2 of the Guide clear? [Major windows refer to the PVD, Mission Editor, Task organization, Status, and MCT.]
___ a. Yes – No substantial changes needed
___ b. Satisfactory – but needs improvement
____ c. No, inadequate and should be revised.

If you marked b or c, what changes would you recommend?

4. Overall, were there sufficient screen displays in the Guide of the OneSAF interface to describe and explain the OneSAF features?

___ a. Yes – No substantial changes needed
___ b. Satisfactory – but needs improvement
____ c. No, inadequate and should be revised

If you marked b or c, what changes would you recommend?

5. Was the Guide organized to enable a new user to understand how to develop a scenario?

___ a. Yes, the sequence of the topics facilitated understanding
___ b. Most of the time
___ c. Some of the time
___ d. No, the sequence of topics was not logical

What changes, if any, would you recommend to improve the organization of the Guide?

The next series of questions (# 6 – 10) ask you to rate the Guide on two dimensions:

- the clarity of the information presented on specific OneSAF functions and features.
- If the information is adequate for a new user (*Does it contain the core of what a new user needs to know to execute a particular feature? Adequate information does not necessarily imply "complete information," that is, you may judge the information as adequate even though it does not contain every detail about the feature.)*

6. **OneSAF task organization functions/procedures** First, rate the **clarity** of the information in the Guide. Second, rate if the information is **adequate** for a new user.	Rating (Circle Y or N in each column)	
	Clear?	**Adequate?**
a. Create a friendly task organization with no modifications to the data base structure	Y / N	Y / N
b. Create a friendly task organization that modifies the data base structure (e.g., create attachments, company team or battalion task force, a combined arms unit, not at full strength)	Y / N	Y / N
c. Create a task organization for insurgents	Y / N	Y / N
d. Create a task organization for civilians	Y / N	Y / N
e. Assign forces specific names - replace default names of forces with specific names	Y / N	Y / N
f. Add a side	Y / N	Y / N
g. Define side relationships (more than 2 default sides)	Y / N	Y / N
Comments		

7. **OneSAF map-related features** First, rate the **clarity** of the information. Second, rate if the information is **adequate** for a new user.	Rating (Circle Y or N in each column)	
	Clear?	**Adequate?**
a. Place units on the map	Y / N	Y / N
b. Move units from original location	Y / N	Y / N
c. Create control measures	Y / N	Y / N
d. Place force in ultra-high resolution buildings (UHRBs)	Y / N	Y / N
e. Use distance tool	Y / N	Y / N
f. Use line of sight tool	Y / N	Y / N
g. Use area of sight tool	Y / N	Y / N
Comments		

8. **Creating control measures in OneSAF**. First, rate the **clarity** of the information. Second, rate if the information is **adequate** for a new user,	Rating (Circle Y or N in each column)	
	Clear?	**Adequate?**
a. Point control measures	Y / N	Y / N
b. Linear control measures	Y / N	Y / N
c. Area control measures	Y / N	Y / N
Comments		

9**. OneSAF Status window functions**. First, rate the **clarity** of the information. Second, rate if the information is **adequate** for a new user.	Rating (Circle Y or N in each column)	
	Clear?	**Adequate?**
a. Changing basic load	Y / N	Y / N
b. Moving “passengers” to different vehicles	Y / N	Y / N
c. Moving vehicles/entities on the map	Y / N	Y / N
d. Naming units or entities	Y / N	Y / N
Comments		

10. **OneSAF Mission Editor Functions.** First, rate the **clarity** of the information. Second, rate if the information is **adequate** for a new user	Rating (Circle Y or N in each column)	
	Clear?	**Adequate?**
a. Creating a single mission table (including subordinate phases)	Y / N	Y / N
b. Using different triggers to initiate behaviors	Y / N	Y / N
c. Debugging errors in mission table(s)/phase(s)	Y / N	Y / N
d. Assigning common behaviors (e.g., move tactically, clear building) to units and/or entities	Y / N	Y / N
e. Creating several mission tables in the desired sequence.	Y / N	Y / N
f. Using triggers to initiate mission phases	Y / N	Y / N
g. Using other Mission Editor functions such as copy, filters etc.	Y / N	Y / N
Comments		

The behaviors described/explained in Chapter 5 of the Guide are listed below.

Question 11 asks you to mark the ones you believe are appropriate to include in a Guide designed for helping users develop company-team and platoon scenarios in the stand-alone mode. A "No" (N) means that you think this behavior should be deleted.

At the bottom of the table, please list any additional behaviors you think should be included.

11. Behaviors described in the User Guide.	**Appropriate?**	**Comments**
a. Move tactically	Y / N	
b. Assault building	Y / N	
c. Assault buildings in area	Y / N	
d. Clear building /room	Y / N	
e. Conduct checkpoint	Y / N	
f. Conduct raid	Y / N	
g. Emplace minefield	Y / N	
h. Issue fire order	Y / N	
i. Support by fire	Y / N	
j. Construct HVIED (Suicide bomber)	Y / N	
k. Detonate self	Y / N	
l. Disperse randomly	Y / N	
m. Emplace explosives	Y / N	
n. Hitch/unhitch (Magic hitch/unhitch)	Y / N	
o. Mount/dismount (Magic mount/dismount)	Y / N	
p. RWA move tactically	Y / N	
q. UAV conduct surveillance	Y / N	
r. Unconventional infiltration	Y / N	
List any other behaviors you think should be added.		

12. List any OneSAF procedures/features or sections you would delete from the Guide.

13. List any other recommendations you have for improving the Guide.

14. List aspects to the Guide that you think are particularly helpful or valuable.

Thank you for taking the time to read the Guide and complete the survey.

APPENDIX B

OneSAF
(Software Version 2.0)
User Guide

September 2009

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Introduction

This guide introduces you to the Army's One Semi-Automated Force (OneSAF) simulation software. OneSAF simulates force-on-force actions, from the brigade to small-unit level. In the stand-alone mode, a force-on-force simulation scenario can be created and executed by a single individual. OneSAF can also be created and executed in a distributed mode with many users. This guide addresses only the stand-alone mode.

The lessons in this guide will assist a small-unit leader in using OneSAF as a mission planning and rehearsal tool to help develop and review courses of action during the military decision-making planning (MDMP) cycle and troop leading procedures (TLP). This guide is not intended to demonstrate all capabilities of the software. It focuses on capabilities that apply to Company Team size elements and below conducting tactical operations during full spectrum warfare in multiple operational environments.

OneSAF Capabilities. Within OneSAF, all behaviors are computer-generated. OneSAF's computer-generated force (CGF) model provides intelligent, doctrinally-correct behaviors representing the modular and future force at the entity (i.e., individual) and unit levels. It provides a unique ability to model unit behaviors from fire team to Brigade level for all units across the spectrum of military operations in the operational environment. It has the capability to model more than 25 different opposing, friendly, unknown, and neutral sides and forces, with asymmetric side relationships, in order to more accurately reflect the operational environment. As an example, in OneSAF it is possible to model two tribes that are both friendly to a side or force, but are enemies toward each other. In addition, OneSAF can model a side that the friendly force sees as unknown on the battlefield, but that force behaves as though it is an enemy. Individual behaviors can also be modeled.

PEO-STRI Product. OneSAF is produced and released by the U.S. Army Program Executive Office for Simulations, Training and Instrumentation (PEO STRI). OneSAF 2.0 was released on 28 Feb 2008. Later versions will be released in the future. To find more information about OneSAF than is contained in this guide, go to the OneSAF website at http://www.onesaf.net/community/

How to Use This Guide

This guide is divided into chapters and appendices that provide procedural steps, tips, and explanations while demonstrating how to build simple scenarios. Chapters 2 through 4 should be read first in sequence, then the remaining chapters and appendices can be read in the order that best suits your interest. Within each chapter, we recommend following the lessons in order; the order of the lessons is designed to roughly imitate a common workflow.

The following list describes each chapter's content.

Chapter	Description
Chapter 1. Introduction	The introduction explains the conventions used throughout the guide.
Chapter 2. OneSAF Workspaces.	This chapter outlines the primary workspace for creating scenarios and the four major windows within that workspace.
Chapter 3. Start-up, Save, and Close Procedures.	This chapter outlines the steps necessary to start, save and close the OneSAF simulation from a Windows™ desktop.
Chapter 4. Building a Basic Scenario.	This chapter is for people who have a rudimentary knowledge of military tactics, but no experience using OneSAF. It shows you the basic steps to build a simple scenario by selecting units, drawing control measures, assigning behaviors (missions), saving the current scenario, and executing the simulation.
Chapter 5. Behaviors.	This chapter focuses on the behaviors available from fire-team to Company level. Specific maneuver behaviors are discussed and explained in detail using a step by step process.
Chapter 6. Example Scenario	This chapter shows the development of a tactical scenario based on a Infantry Company Team attack at the National Training Center in Fort Irwin, CA.
Appendix A. Status Window	This appendix describes the Status window in more detail.
Appendix B. Adding Sides	This appendix outlines the steps to add additional sides and define the relationships between them.
Appendix C. Deleting a Scenario	This appendix outlines the steps to delete a scenario from the simulation software.
Appendix D. Triggers	This appendix describes the steps used to apply triggers that start behaviors.
Appendix E. Tools	This appendix describes the Line of Sight, Area of Sight, Distance, and Layer Tools in more detail.
Appendix F. UHRB	This appendix describes the Ultra High Resolution Buildings available in the Southwest Asia and JRTC terrain databases.
Appendix G. List of Available Behaviors	This appendix lists the available behaviors by echelon.

Appendix H. List of Available Control Measures	This appendix lists the available control measures.

User Guide Conventions

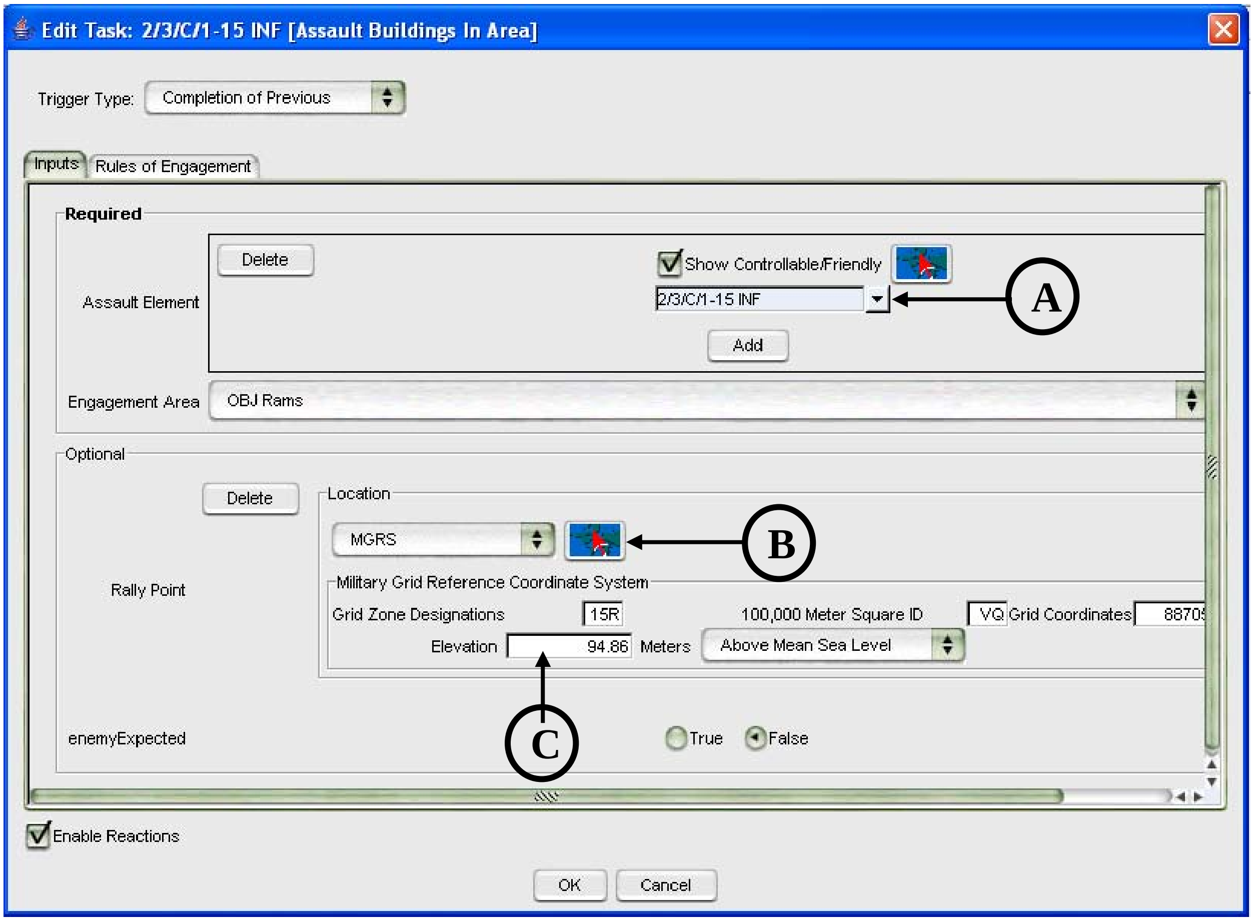
- Screen captures
- Words
- Arrows
- Circles
- LC and RC (left click and right click)
- Tips and Information Icons

This guide uses *screen captures* from the OneSAF Simulation software to explain the steps used to load, run, build a scenario, and close the software. In order to build a scenario, OneSAF uses windows that you can open and close. The procedures for opening and closing windows are similar to what you do with Microsoft products. In addition, the windows contain buttons, icons, and menus which you must press. In some cases, you must "mouse over" specific comments. A screen capture of a window is given below.

A – Drop-down menus

B – Buttons

C – Write-in windows



Edit Task: 2/3/C/1-15 INF [Assault Buildings In Area]

Trigger Type: Completion of Previous

Assault Element: 2/3/C/1-15 INF

☑ Show Controllable/Friendly

Engagement Area: OBJ Rams

Location: MGRS

Grid Zone Designations: 15R

100,000 Meter Square ID: VQ

Grid Coordinates: 8870

Elevation: 94.86 Meters Above Mean Sea Level

enemyExpected: ○ True ● False

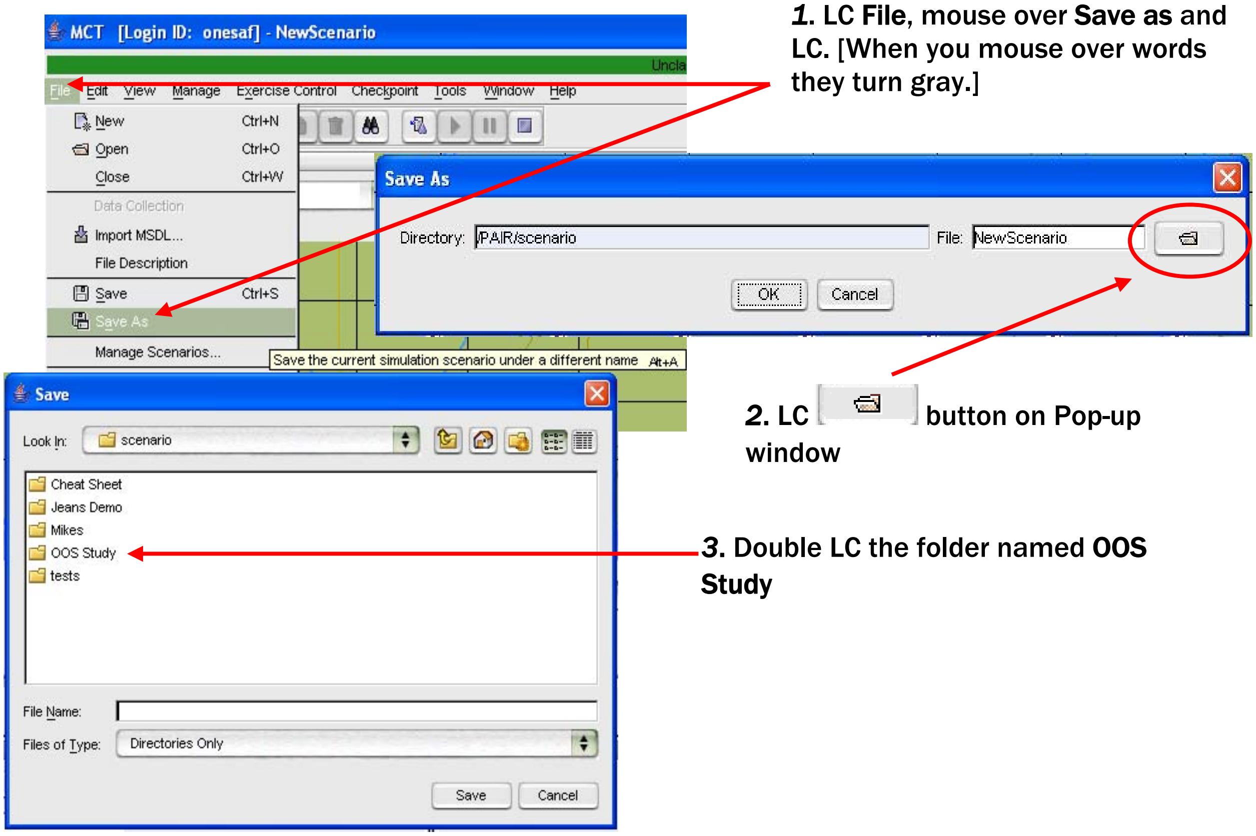
☑ Enable Reactions

Inputs
Rules of Engagement
Required
Delete
Add
Optional
Delete
Rally Point
Military Grid Reference Coordinate System
OK
Cancel
A
B
C

1. Introduction. User Guide Conventions

The Guide uses *words, arrows* and *circles* to direct your attention to the appropriate buttons or menus in a window. In place of stating “left click” or “right click” on something with your mouse, the abbreviation “*LC*” is used for left click, and “*RC*” is used for right click. The distinction between LC and RC commands is very important as these two functions control different, yet critical features of OneSAF.

Additionally, we will instruct you to “mouse over” an item in order to make a second pop-up window appear, and then RC or LC. The example of how to save a scenario using the three screen captures shown below illustrates the conventions used throughout the Guide.


MCT [Login ID: onesaf] - NewScenario
Uncla
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
New Ctrl+N
Open Ctrl+O
Close Ctrl+W
Data Collection
Import MSDL...
File Description
Save Ctrl+S
Save As
Manage Scenarios...
Save the current simulation scenario under a different name Alt+A
Save As
OK
Cancel
Save
Look In:
Cheat Sheet
Jeans Demo
Mikes
OOS Study
tests
Save
Cancel

Directory: /PAIR/scenario

File: NewScenario

Look In: scenario

File Name:

Files of Type: Directories Only

1. LC **File**, mouse over **Save as** and LC. [When you mouse over words they turn gray.]

2. LC button on Pop-up window

3. Double LC the folder named **OOS Study**

1. Introduction. User Guide Conventions

Tips and Information Icons

Throughout the user guide 2 icons appear; the Tips icon and the Information Icon.

The Tips icon gives you additional guidance for the particular step you are engaged in executing. It will also give you some good to know information that applies to the current step. E.g. grid coordinates for identifiable locations on the 2-Dimensional map.

The Information icon will redirect you to either the appendices or another section within the user guide to get more information on the identified subject.

OneSAF Workspaces

OneSAF has four (4) workspaces that interact with each other. They are the

- **Management Control Tool (MCT)**
- **Military Scenario Development Environment (MSDE)**
- **Power STRIPES After Action Review (AAR) window**
- **AcuScene OneSAF Stealth window**

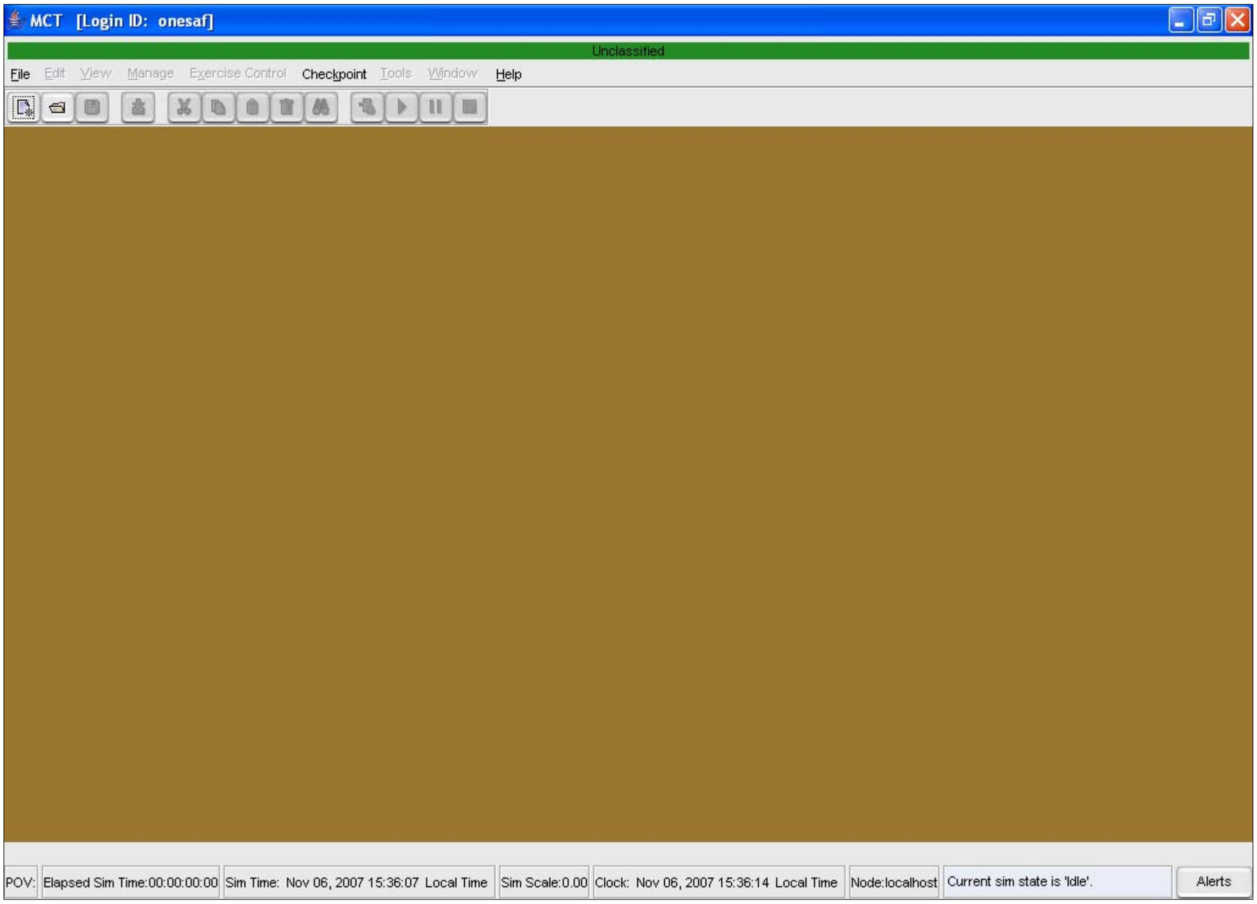
The Guide focuses on the MCT and the processes accomplished within the MCT workspace to build and run a scenario.

Management Control Tool (MCT)

The MCT is OneSAF's primary tool for creating and executing a simulation scenario. It has two functions. First, it provides scenario planning functions that enable you to create, edit, save, and execute a simulation scenario. Second, it controls the simulation scenario by initializing, running, pausing or setting the time scale, and stopping the simulation scenario.

In Microsoft Windows ™, when you start the "runtime loader," you can open the MCT workspace. The next screen you see is depicted below.

Go to Chapter 3 to learn about the "runtime loader" and how to start OneSAF.


MCT [Login ID: onesaf]
Unclassified
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
POV:
Elapsed Sim Time:00:00:00:00
Sim Time: Nov 06, 2007 15:36:07 Local Time
Sim Scale:0.00
Clock: Nov 06, 2007 15:36:14 Local Time
Node:localhost
Current sim state is 'Idle'.
Alerts

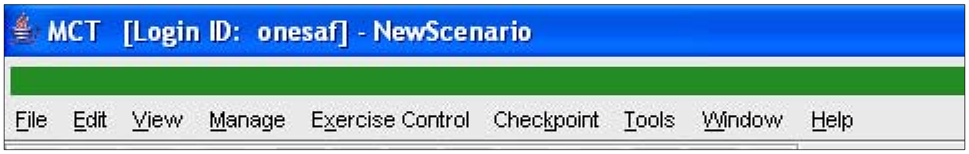
As in any Microsoft Office™ Program, there is a tool bar at the top of the display, in this case the MCT workspace. This tool bar is a combination of buttons and drop down menus that allows you to set specific parameters for the simulations. As you can see in this display, the majority of the menu commands are not accessible when you simply open the MCT workspace. This is remedied by either loading a previously built scenario or by starting a new scenario.

> ***Suggestion.*** If you are using OneSAF while reading the Guide, it is strongly suggested that at this point you either load an existing scenario or create a new scenario in order to reveal the toolbars, menus, and buttons described in this chapter. Steps to load a scenario or start a new scenario are in the next chapter, Chapter 3.

Once your scenario is open, you will find a second MCT tool bar below the top tool bar.

MCT Top Tool Bar

We first provide an overview of the menu commands in the top tool bar in the MCT window by proceeding from left to right. The menus illustrated or used later in the guide are marked with double asterisks.



The **File and **Edit** menus contain the standard menu items for File and Edit menus, such as New, Open, Close, Save, Save as, Cut, Copy, and Paste. The File menu also contains various commands for viewing or acting upon the simulation, such as Import MSDL (Military Scenario Development Language), File Description, Manage Scenarios, and Rebuild Repository Database. The common File and Edit commands are also accessible through buttons.

The **View** menu allows you to access a workstation report that summarizes the sides, forces, units, and entities.

The **Manage menu allows you to select the terrain database for the simulation, rename and move overlays, set the side point of view, and specify side relationships (side relationships are explained on page 4-5).

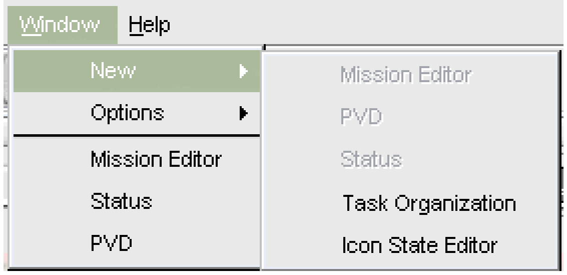
The **Exercise Control menu, in conjunction with the buttons, initializes, runs, pauses, and stops the simulation. The menu also allows you to set the simulation scale (which is the simulation speed) and period for the scenario (length of time).

The **Checkpoint** menu allows you to set checkpoints through out the scenario to use in an AAR format.

The **Tools** menu has 8 options for selection; User Actions, Magic Bomb, Export Control Measures, Customize, Data Collection Dialog (unavailable on Ver 2.0), Reports, Stealth Tool Controller (Unavailable), and Communications.

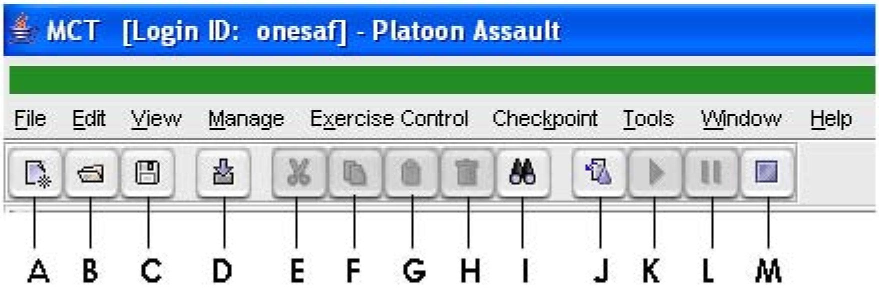
The **Window drop-down menu is used to open 5 windows which you can use to build the simulation scenario, and to arrange the windows in the MCT workspace at the user's discretion. This drop down menu is split into 2 parts. The upper half allows you to select the window you want open and how it is arranged, and the lower half lists the windows that are already open. The Window-New command reveals the windows that are available to open. The lettering that has been grayed out means those windows are already open. This is the only method of accessing the windows. Three windows, the Plan View Display, Mission Editor, and Status open by default when you select a new simulation scenario. These three windows are required to develop any scenario and are typically displayed simultaneously for easy access.

The Task Organization window is also required in scenario development and is opened by selecting the **Window-New** menu.


Window
Help
New
Options
Mission Editor
Status
PVD
Mission Editor
PVD
Status
Task Organization
Icon State Editor

MCT Second Tool Bar

As indicated previously, once you open a scenario you will see a second tool bar with a series of buttons. These are short-cut buttons that are related to the "File", "Edit", and "Exercise Control" menus. The function of each button, and the relationship between the top and second tool bar, is summarized below with a word or brief phrase.


MCT [Login ID: onesaf] - Platoon Assault
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
A
B
C
D
E
F
G
H
I
J
K
L
M

	Top Tool Bar Functions		
Button on Second Tool Bar	**File Menu**	**Edit Menu**	**Exercise Control Menu**
A. New Scenario	X		
B. Open	X		
C. Save	X		
D. Import MSDL	X		
E. Cut		X	
F. Copy		X	
G. Paste		X	
H. Delete		X	
I. Find		X	
J. Initialize			X
K. Run			X
L. Pause			X
M. Stop			X

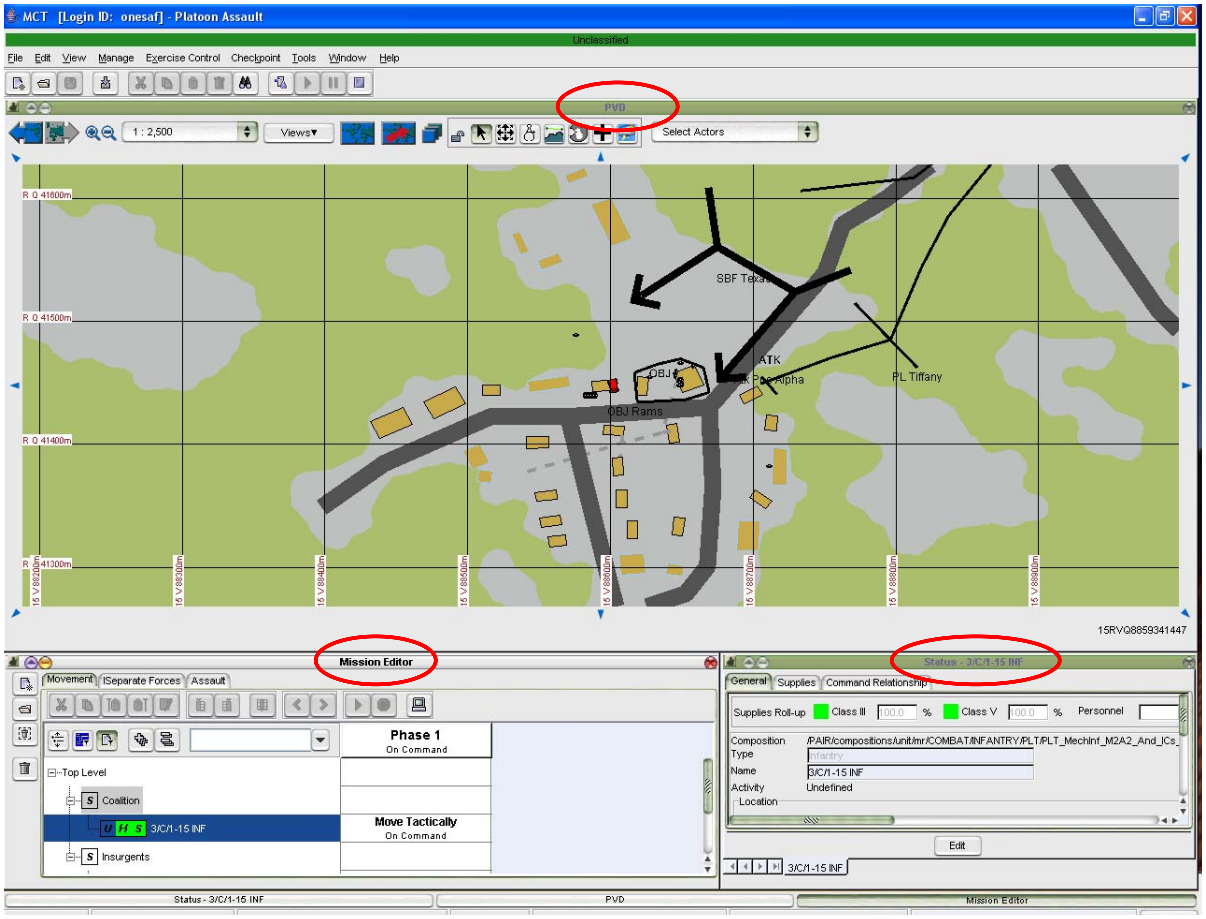
MCT Primary Windows

The MCT has four distinct windows that allow you to: (1) build a task organization of friendly, enemy, and unknown forces, (2) apply control measures to the map/terrain, (3) assign behaviors (missions and tasks), and (4) run the simulation.

The screen capture on this page and the screen capture on the next page depict these four windows and give a brief description of each. Each is discussed in detail following this overview.

- **Plan View Display (PVD) Window**: a 2-dimensional representation of the terrain (scaleable map), graphic control measures, units, etc. It is where the simulation runs graphically to allow you to view your plan and the simulation unfolding.
- **Mission Editor Window**: similar to an execution matrix. This is where the units in the Task Organization window are assigned tasks to perform.
- **Status Window:** used to determine scenario outcomes and change properties of units and objects on the map.

These 3 windows are highlighted in the screen capture below, with the map (PVD) in the center of the screen and the Mission Editor and Status windows side-by-side at the bottom.


MCT [Login ID: onesaf] - Platoon Assault
Unclassified
File Edit View Manage Exercise Control Checkpoint Tools Window Help
PVD
1 : 2,500
Views
Select Actors
R Q 41600m
R Q 41500m
R Q 41400m
R Q 41300m
15 V 88200m
15 V 88300m
15 V 88400m
15 V 88500m
15 V 88600m
15 V 88700m
15 V 88800m
15 V 88900m
SBF Texas
ATK
Atk Pos Alpha
PL Tiffany
OBJ
OBJ Rams
15RVQ8859341447
Mission Editor
Movement
Separate Forces
Assault
Phase 1
On Command
Top Level
Coalition
3/C/1-15 INF
Move Tactically
On Command
Insurgents
Status - 3/C/1-15 INF
General
Supplies
Command Relationship
Edit
3/C/1-15 INF
Status - 3/C/1-15 INF
PVD
Mission Editor

Supplies Roll-up 🟩 Class III 100.0 % 🟩 Class V 100.0 % Personnel

Composition /PAIR/compositions/unit/mr/COMBAT/INFANTRY/PLT/PLT_MechInf_M2A2_And_ICs_

Type Infantry

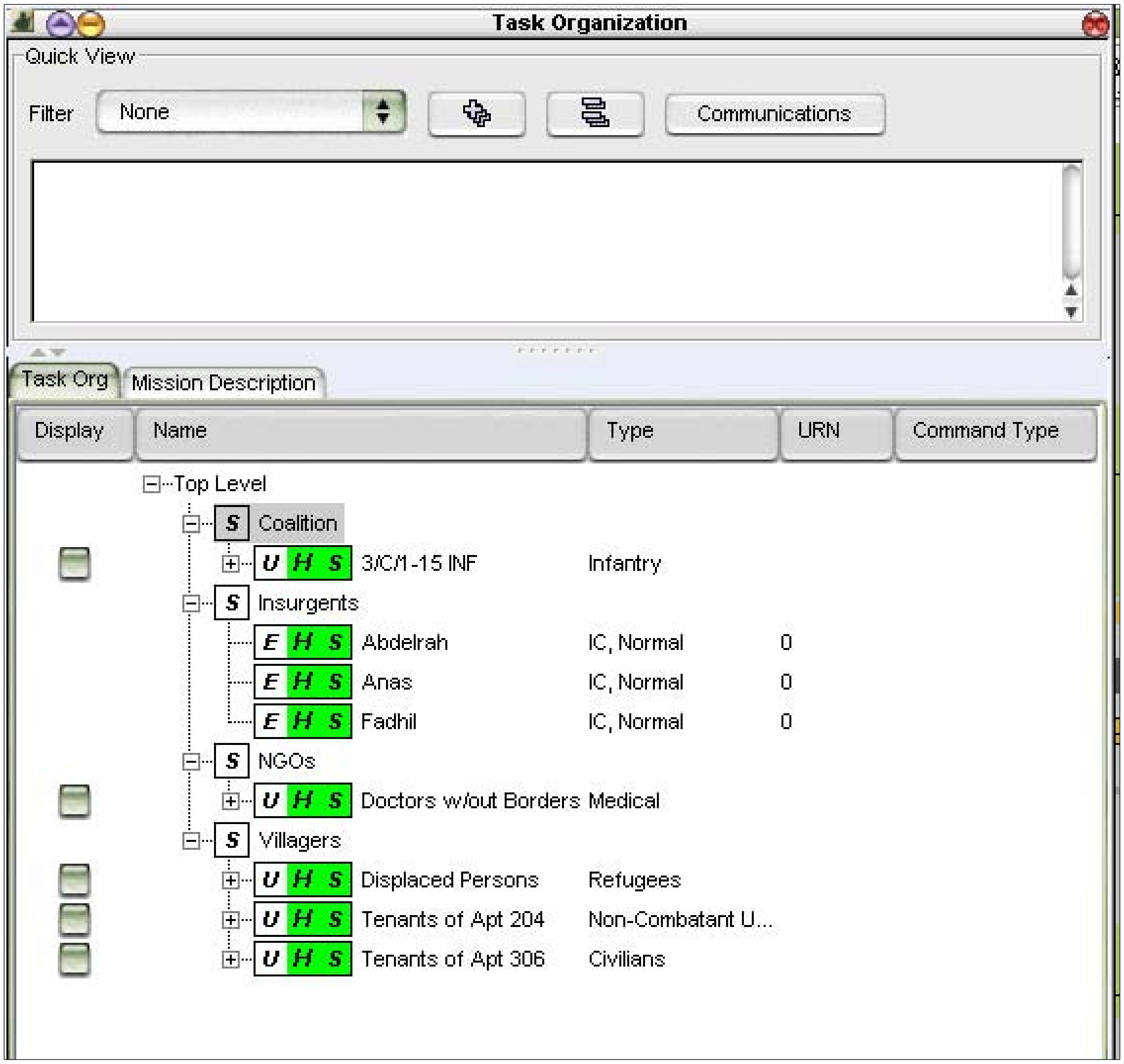
Name 3/C/1-15 INF

Activity Undefined

Location

- **Task Organization Window**: This is the fourth window that is discussed in detail in the Guide. It is used to add and delete entities and units to a simulation. It automatically defaults to two sides: **Coalition** and **Insurgents**

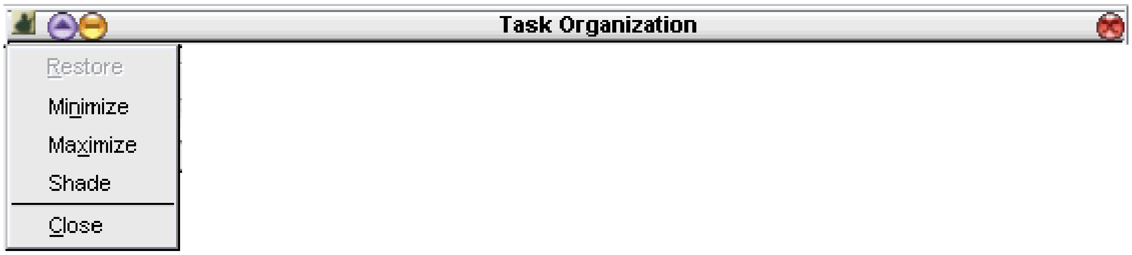
The Task Organization Window is displayed by first selecting the Window-New menu on the top tool bar and then selecting "Task Organization" from the drop-down menu. The Task Organization Window is used in the initial development of the scenario. The screen capture below shows a task organization developed for a scenario that depicts the current operational environment.



Display	Name	Type	URN	Command Type
	⊟ Top Level			
	⊟ S Coalition			
☐	⊞ U H S 3/C/1-15 INF	Infantry		
	⊟ S Insurgents			
	E H S Abdelrah	IC, Normal	0	
	E H S Anas	IC, Normal	0	
	E H S Fadhil	IC, Normal	0	
	⊟ S NGOs			
☐	⊞ U H S Doctors w/out Borders	Medical		
	⊟ S Villagers			
☐	⊞ U H S Displaced Persons	Refugees		
☐	⊞ U H S Tenants of Apt 204	Non-Combatant U...		
☐	⊞ U H S Tenants of Apt 306	Civilians		

General Features of the Windows

When developing a scenario you may want to expand a particular window to facilitate working with it, and then later shrink it or minimize it. Each of these windows can be scaled in size and minimized via the buttons at the top left and right of each.



Maximize - ▲

Minimize - ⊖

You can also size the window to your specifications by mousing over the sides of the window until a directional arrow appears, then LC and drag each side to the desired size, and release the edge.

Each individual window has unique features that are accessed through the use of buttons, menus, scroll bars, etc. Each feature is covered in more detail in the next sections of this chapter.

Relationship of the Windows to Mission Planning

Task Organization allows you to define the units and entities in the “conflict.” You can use the organizational structures and equipment that are the “default” settings with a specific type of unit, or you can modify the unit to reflect a distinct task organization.

The map or PVD allows you to locate units and graphic control measures on the map as well as observe the simulation exercise you designed.

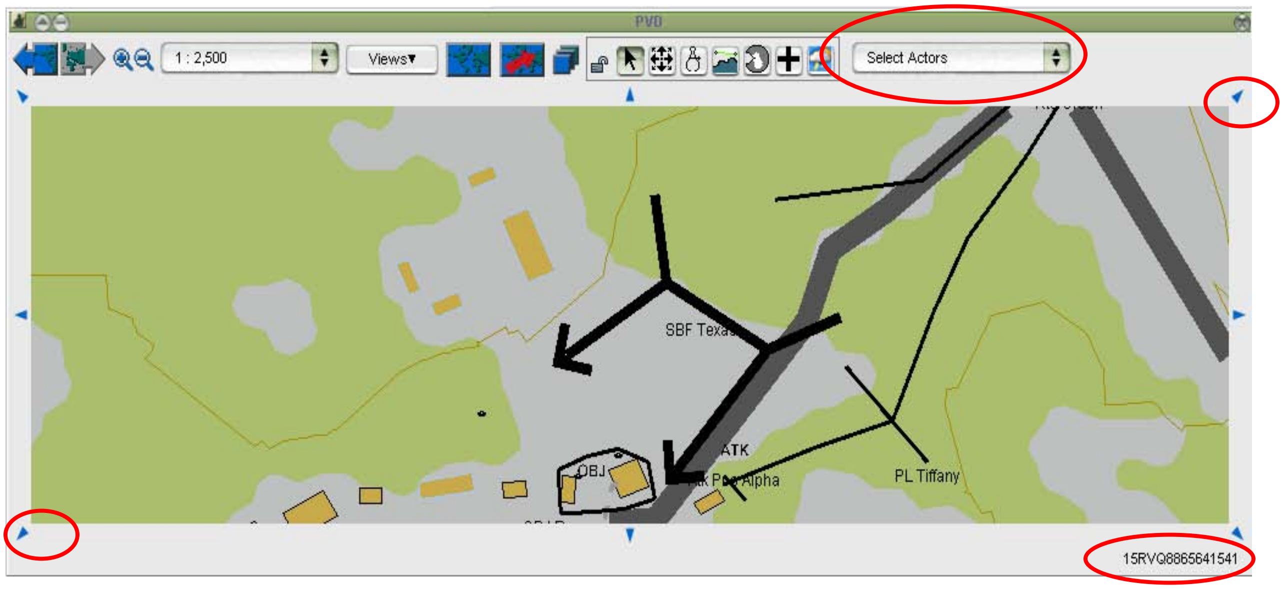
The Mission Editor can be viewed as a form of an execution matrix which defines the behaviors or actions you want each unit to perform and the sequence/timing of those behaviors or actions. You can select which behaviors you desire each echelon to perform. It reflects your decisions and is a major part of your plan.

The Status window is a management tool which can be used to modify the status of units before the mission (name, combat load, etc.) and check the status both during and after the simulation (ammunition/fuel, unit attrition, etc.)

2. OneSAF Workspaces. Management Control Tool (MCT) – Plan View Display (PVD)

Plan View Display

The Plan View Display (PVD) is the 2-dimensional representation of the terrain (scaleable map) where the simulation runs graphically, allowing you to view your plan and watch the simulation scenario unfold. The PVD has many tools to enhance your ability to develop your scenario. These tools range from forward and backward buttons to area-of-sight and line-of-sight tools. You will use these tools to build a scenario in Chapter 4.



PVD Tool Bar and Features

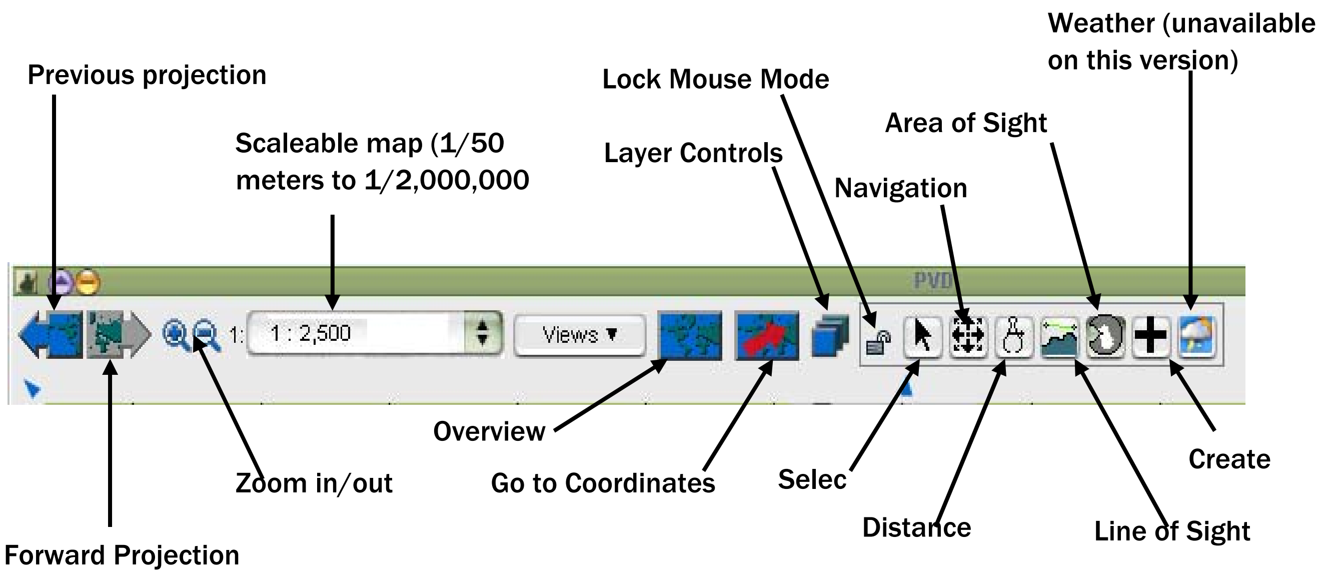
Three features of the PVD are circled on the screen shot above

Directional Arrows – the 8 blue arrows located around the border of the PVD move it approximately ¼ of the screen in the direction of the arrow.

Grid Coordinate – the grid coordinates in the lower right corner of the PVD correspond to the location of the cursor on the map. These coordinates can be changed to UTM (Universal Transverse Mercator), MGRS (Military Grid Reference System), and GCC or GDC (Geocentric or Geodetic Coordinates).

Select Actors, Any, Control Measures, and Environmental Objects Drop Down Menu – this menu is used to select features on the PVD screen. If you want to select Actors (i.e., units), then the "Select Actors" must appear in the window. If you want to be able to select any item at any time (to include graphic control measures and buildings), then insure "Select Any" appears in the window.

2. OneSAF Workspaces. Management Control Tool (MCT) – Plan View Display (PVD)


Previous projection
Scaleable map (1/50 meters to 1/2,000,000
Lock Mouse Mode
Layer Controls
Navigation
Area of Sight
Weather (unavailable on this version)
PVD
1: 1 : 2,500
Views ▼
Overview
Zoom in/out
Go to Coordinates
Selec
Create
Distance
Line of Sight
Forward Projection

Previous and Forward Projection –

These buttons are similar to the “Back” and “Forward” buttons on an internet web browser. They allow you to view the previous and next PVD screen.

Zoom in/out–

Scaleable Map - This menu allows you to increase or decrease the scale of the map sheet from a scale of 1/50 to 1/2,000,000. These two tools, Zoom in/out and Scaleable Map, change the zoom level of the map in the exact same way.

Views - Views▼

This button allows you to save and view different pictures of the PVD map. For example, you can save a view that focuses on a village area and a larger view of the village and surrounding terrain. This allows you to quickly switch between the two views without taking the time to zoom in and out or to scroll to a different part of the map.

Overview –

Overview buttons provides a small map screen that covers a larger area of the map. You can select a different location on the overview screen and the larger PVD map sheet will move to that location.

Go to Coordinates -

The Go to Coordinates button opens a dialog box that prompts you to input exact coordinates, e.g. 15R VQ 88239 42153. The PVD screen then centers itself on those coordinates.

Layer Controls –

This button opens a pop-up window that allows you to select various layers to be displayed or hidden on the PVD screen.

Lock-in Mouse Mode -

This button locks the mouse in the selected mode e.g. distance tool, area of sight tool, until you select another tool or mode. (Best if left unlocked)

Select –

The Select button is used to activate the cursor after applying tools in the Mouse Lock Mode.

Navigation –

This button has 2 methods of navigating around the PVD screen. First, you can center the PVD screen on a desired location by LC on the button, and then LC on that desired location. Second, you can draw a box (similar to Windows™ LC drag and release) around a particular piece of terrain you want to zoom in on (the smaller the box the tighter the zoom level).

Distance Tool –

The Distance tool gives you the ability to measure straight line distance. The results of the measurement are displayed in meters and the angle of deflection is displayed in degrees. When combined with the 3-D terrain, this tool can be used for time/distance analysis during route development.

Line of Sight (LOS) Tool –

The LOS tool gives you the ability to get the Soldiers perspective in a straight line from any position on the map. The perspective and target can be adjusted by height.

Area of Sight (AOS) Tool –

The AOS tool gives you the ability to get the Soldiers perspective in a 1 degree wedge, or up to a 360 degree circle. The results are displayed directly on the map.

See Appendix E for more information on the Distance Tool, Layer tool, Line of Sight tool, and the Area of Sight tool.

Create –

The Create button opens a dialog box that allows you to create Control Measures, Environmental Points and Areas, and Point, Linear and Area Features. This tool will be discussed in more detail during the lesson on creating control measures.

See the “Place Control Measures on a Map” for more information on the Create tool.

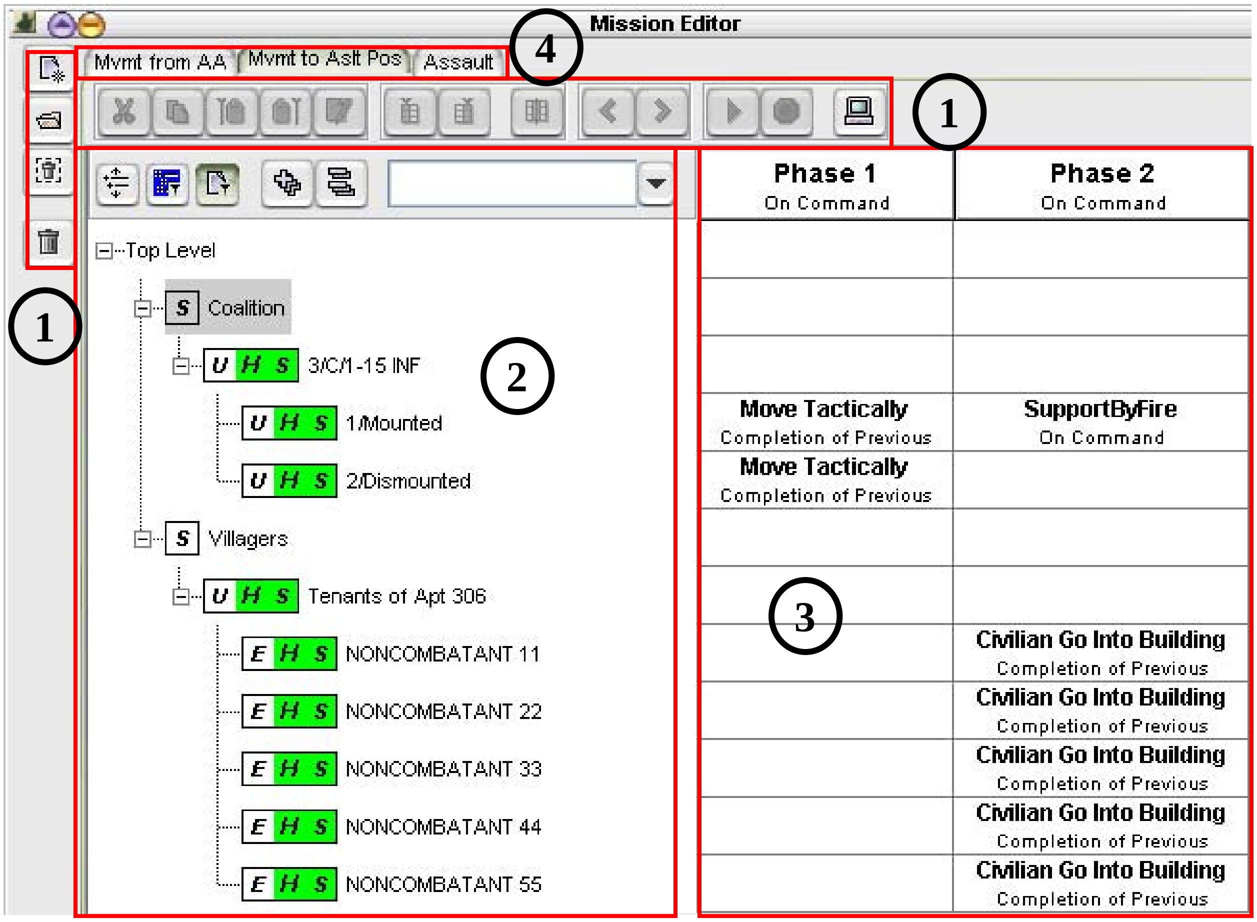
Weather –

This tool does not function in Version 2.0.

Mission Editor

The Mission Editor window, modeled after an Excel spreadsheet, can be used as a synchronization matrix to plan missions and tasks, and then as an execution matrix to execute the plan. Each mission table is divided into rows and columns. The rows represent the units available for tasking, and the columns represent events in the different phases of the mission. Multiple mission tables can be developed for each phase of the mission e.g. Reconnaissance Phase, Movement Phase, etc.

When expanded, the Mission Editor will look like the screen capture below. This gives you more space to work and understand the process of sequencing the events for each unit. Each numbered item corresponds to the numbered explanation on the next page.



	Phase 1 On Command	Phase 2 On Command
Top Level		
S Coalition		
U H S 3/C/1-15 INF		
U H S 1/Mounted	Move Tactically Completion of Previous	SupportByFire On Command
U H S 2/Dismounted	Move Tactically Completion of Previous	
S Villagers		
U H S Tenants of Apt 306		
E H S NONCOMBATANT 11		Civilian Go Into Building Completion of Previous
E H S NONCOMBATANT 22		Civilian Go Into Building Completion of Previous
E H S NONCOMBATANT 33		Civilian Go Into Building Completion of Previous
E H S NONCOMBATANT 44		Civilian Go Into Building Completion of Previous
E H S NONCOMBATANT 55		Civilian Go Into Building Completion of Previous

2. OneSAF Workspaces. Management Control Tool (MCT) – Mission Editor

The Mission Editor window has 4 critical areas (numbered 1 through 4 in the screen capture). Each area is briefly explained here, and discussed in more detail in the "Assigning Missions to Entities and Units" lesson in Chapter 4.

① The first area is the tool bar located on the top and side of the window.

② The second area is on the left side of the window and displays all the units/entities available for tasking.

③ The third area is on the right side of the window and displays the different missions/tasks assigned to each unit/entity

④ The fourth area is at the top of the window and represents the different mission tables available representing the different phases of the mission.

This screen capture is displaying a mission editor from a Mechanized Infantry Platoon assault scenario. The Mission Editor is divided into 3 matrices "Mvmt from AA", "Mvmt to Aslt Pos", and "Assault" which correspond with 3 different phases of the mission. The screen shot is displaying only the units or entities that have been assigned tasks during the second phase "Mvmt to Aslt Pos".

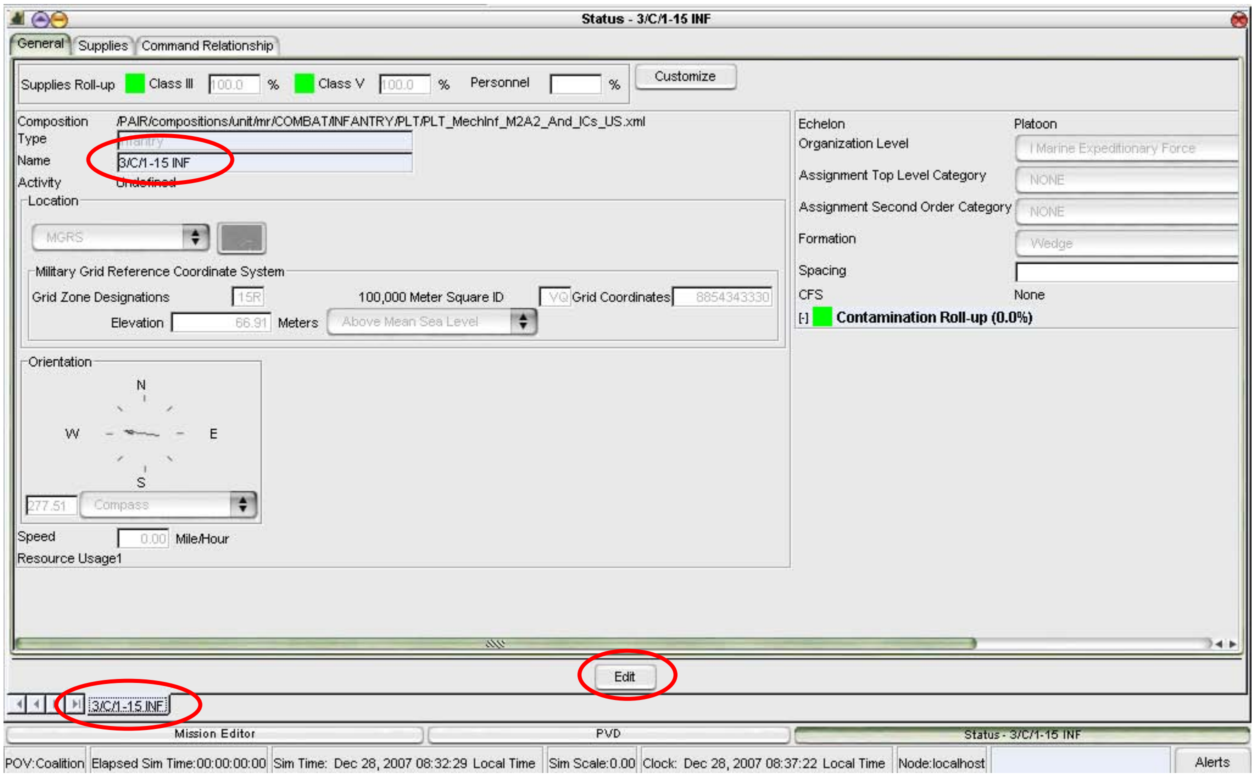
The Mission Editor gives you the capability to break each phase of the mission down into sub-phases allowing you to synchronize the movement or execution of tasks. In this screen capture the vehicle section (mounted) and the infantry squads (dismounted) are moving in 2 different directions towards the objective. The mounted section is given a follow-on task of providing a support by fire. The villagers are given the task "Civilian Go into Building". The task is copy and pasted to each individual and then the building numbers are changed in the body of the task to replicate the villagers going into their separate homes.

2. OneSAF Workspaces. Management Control Tool (MCT) – Status Window

Status Window

The Status window has multiple purposes. It is used to display status, edit basic load or cargo, change location and heading of units, redefine the name and command relationship of units or in the case of a vehicle entity, determines the passengers of the vehicle. The Status window is populated with the information for the selected entity through the properties command in the pop-up window of the Task Organization or Mission Editor window (this will be explained in more detail in the lesson “Select and Place Forces on a Map” in Chapter 4).

The status window shown below is for 3rd Platoon, Charlie Company, 1st of the 15th Infantry (3/C/1-15 INF). See the name displays circled below.


Status - 3/C/1-15 INF
General
Supplies
Command Relationship
Customize
Location
MGRS
Military Grid Reference Coordinate System
Orientation
N
W
E
S
Compass
Edit
3/C/1-15 INF
Mission Editor
PVD
Status - 3/C/1-15 INF
Alerts

Supplies Roll-up 🟩 Class III 100.0 % 🟩 Class V 100.0 % Personnel %

Composition /PAIR/compositions/unit/mr/COMBAT/INFANTRY/PLT/PLT_MechInf_M2A2_And_ICs_US.xml

Type Infantry

Name 3/C/1-15 INF

Activity Undefined

Grid Zone Designations 15R

100,000 Meter Square ID VQ

Grid Coordinates 8854343330

Elevation 66.91 Meters Above Mean Sea Level

277.51 Compass

Speed 0.00 Mile/Hour

Resource Usage1

Echelon Platoon

Organization Level I Marine Expeditionary Force

Assignment Top Level Category NONE

Assignment Second Order Category NONE

Formation Wedge

Spacing

CFS None

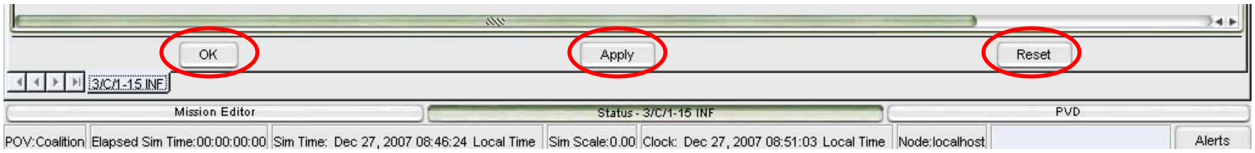
[-] 🟩 **Contamination Roll-up (0.0%)**

POV:Coalition | Elapsed Sim Time:00:00:00:00 | Sim Time: Dec 28, 2007 08:32:29 Local Time | Sim Scale:0.00 | Clock: Dec 28, 2007 08:37:22 Local Time | Node:localhost

In order to edit any information contained in the window you must first select the “Edit” button at the bottom of the Status screen. For example, if you wanted to change the location of the unit you would select “edit” and then the MGRS menu. Or if you wanted to change the orientation, you would select “edit” and then change the unit’s heading by either dragging the compass arrow around to the new heading, or change the degree number by typing in the new heading.

2. OneSAF Workspaces. Management Control Tool (MCT) – Status Window

Once selected, the drop down menus that can be edited will change from grey to black and the “Ok”, “Apply”, and “Reset” buttons will replace the “Edit” button at the bottom of the screen.


OK
Apply
Reset
3/C/1-15 INF
Mission Editor
Status - 3/C/1-15 INF
PVD
POV:Coalition
Elapsed Sim Time:00:00:00:00
Sim Time: Dec 27, 2007 08:46:24 Local Time
Sim Scale:0.00
Clock: Dec 27, 2007 08:51:03 Local Time
Node:localhost
Alerts

The Entity/Unit information is contained on tabs located at the top of the Status window. The number of tabs differs in conjunction with the size of the Entity/Unit selected. They can range from 3 tabs, “General”, “Supplies”, and “Command Relationship” as seen previously, to 3 additional tabs “Personnel”, “External Components” and “Components”. The “Supplies” and “Personnel” tabs have 2 additional sub-tabs labeled “Basic Load” and “Cargo”, and “Crew” and “Passengers”. It is within these tabs that you can modify the equipment or ammunition that an entity/unit carries, or move personnel around within the vehicles. The steps necessary to complete the above mentioned tasks are described in more detail throughout the lessons contained in Chapter 4.

See Appendix A for more information on the Status Window

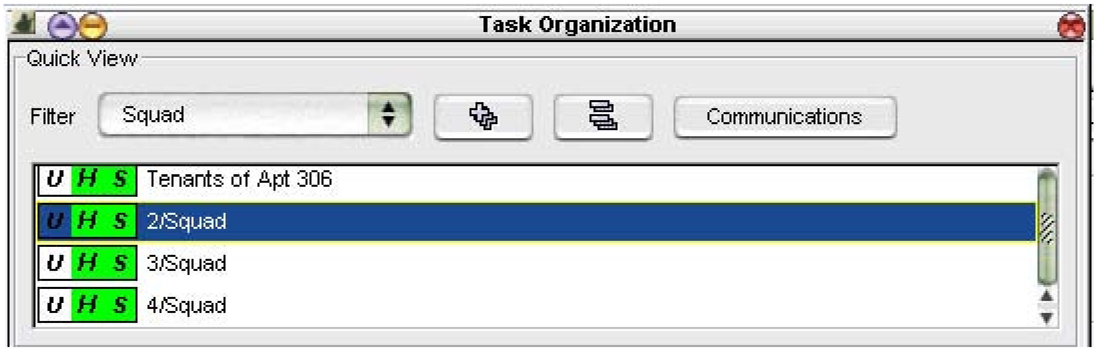
Task Organization

In OneSAF, defining the organizations to be simulated (who is in the area of operations?) is done very early. Using the Task Organization (TO) window will typically follow downloading the map or terrain of interest. The Task Organizations must be defined prior to developing control measures and prior to using the Mission Editor.

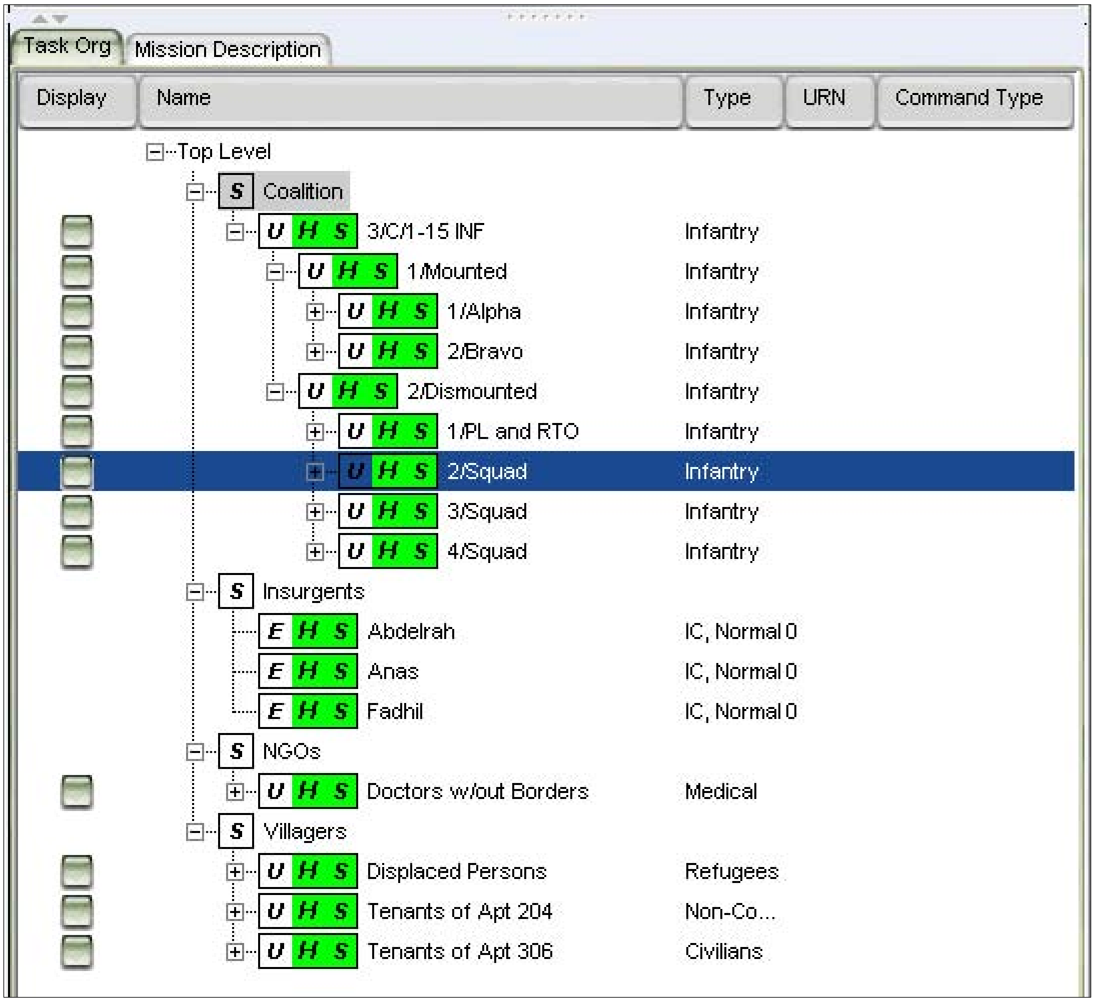
This window is the area in which you create, identify, edit, and select the Entity (an individual), Unit (at least two individuals), Force, and Side. The window allows you to select multiple sides and assign up to 27 different doctrines in addition to setting the side relationships from “friendly” to “hostile” to “neutral” to “unknown”. Chapter 4 (Basic Scenario Building, Select and place Forces/Units/Entities on the Map) defines the differences between Sides and Forces.

Through deletions and additions, the Task Organization allows you to modify a task organization to mimic the actual unit. For example, an Armor Battalion Modified Table of Organization and Equipment (MTO&E) can be modified into an Armor Battalion Task Force with the deletion and addition of Armor and Infantry Companies. A Field Artillery Company could have UAV assets assigned under its direct control. By deleting personnel, a simulation scenario unit could match an actual unit’s manpower strength.

The Task Organization window is divided into two sections, the Quick View section and the detailed section. The quick view section allows you to apply filters by echelon, expand or collapse the unit’s hierarchy, and quickly identify each element selected. The Quick View window below is displaying all squad size elements available in the simulation. By highlighting the 2/Squad in the Quick View window, you will find the corresponding 2/Squad highlighted in the detailed view on the next page.



2. OneSAF Workspaces. Management Control Tool (MCT) – Task Organization



Display	Name	Type	URN	Command Type
	Top Level			
	S Coalition			
☐	U H S 3/C/1-15 INF	Infantry		
☐	U H S 1/Mounted	Infantry		
☐	U H S 1/Alpha	Infantry		
☐	U H S 2/Bravo	Infantry		
☐	U H S 2/Dismounted	Infantry		
☐	U H S 1/PL and RTO	Infantry		
☐	U H S 2/Squad	Infantry		
☐	U H S 3/Squad	Infantry		
☐	U H S 4/Squad	Infantry		
	S Insurgents			
	E H S Abdelrah	IC, Normal 0		
	E H S Anas	IC, Normal 0		
	E H S Fadhil	IC, Normal 0		
	S NGOs			
☐	U H S Doctors w/out Borders	Medical		
	S Villagers			
☐	U H S Displaced Persons	Refugees		
☐	U H S Tenants of Apt 204	Non-Co...		
☐	U H S Tenants of Apt 306	Civilians		

The detailed view in the Task Organization window depicts all entities, units, forces, or sides available in the current simulation. The window defaults to 2 sides, Coalition and Insurgents. Any additional sides are added at the discretion of the user. This particular Task Organization window has 4 sides, the Coalition, the Insurgents, the Non Governmental Organizations (NGOs) and the Villagers. When expanded, each side displays the forces, units or entities assigned to it.

Each entity and unit has 1 of 3 letters in front of it.

- *"E"* or *"U"* stands for Entity or Unit
- *"H"* stands for Health
- *"S"* stands for Supplies

These letters, combined with the colors green, amber, red, and black, are one method to determine the outcome of a scenario. The colors change from green to amber, then to red, and finally to black as the units or entity's health and supplies diminishes. These colors, and how to set them, are covered in Appendix A.

The naming conventions for Sides, Forces, Units, and Entities will be discussed in more detail in Chapter 4 "Creating a Basic Scenario.

Start-Up, Save, Stopping and Reloading, and Shut Down Procedures

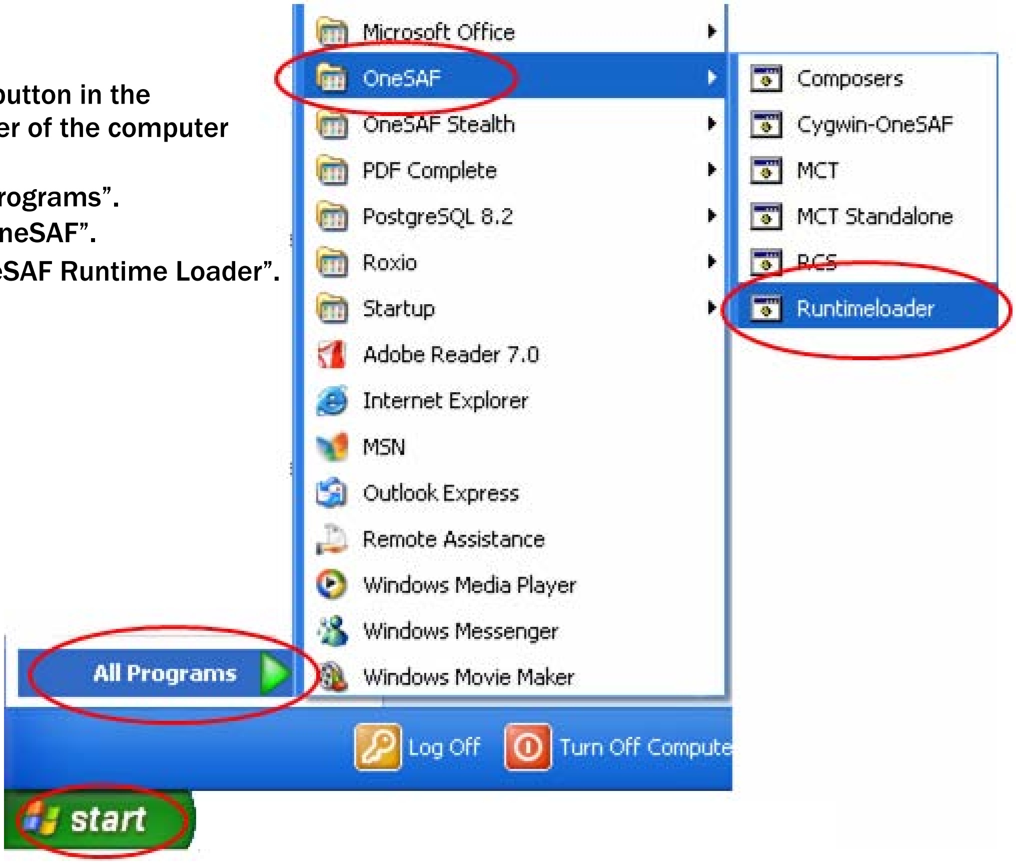
Start Up

The start up process for OneSAF when loaded on a computer using Microsoft Windows^{xp} **Professional can be accomplished in 2 ways:**

1. without the shortcut displayed on the desktop
2. with the shortcut displayed on the desktop.

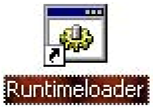
Without Shortcut

- **LC the "start" button in the lower left corner of the computer screen.**
- **Mouse over "Programs".**
- **Mouse over "OneSAF".**
- **LC on the "OneSAF Runtime Loader".**


Microsoft Office
OneSAF
OneSAF Stealth
PDF Complete
PostgreSQL 8.2
Roxio
Startup
Adobe Reader 7.0
Internet Explorer
MSN
Outlook Express
Remote Assistance
Windows Media Player
Windows Messenger
Windows Movie Maker
Composers
Cygwin-OneSAF
MCT
MCT Standalone
PCS
Runtimeloader
All Programs
Log Off
Turn Off Compute
start

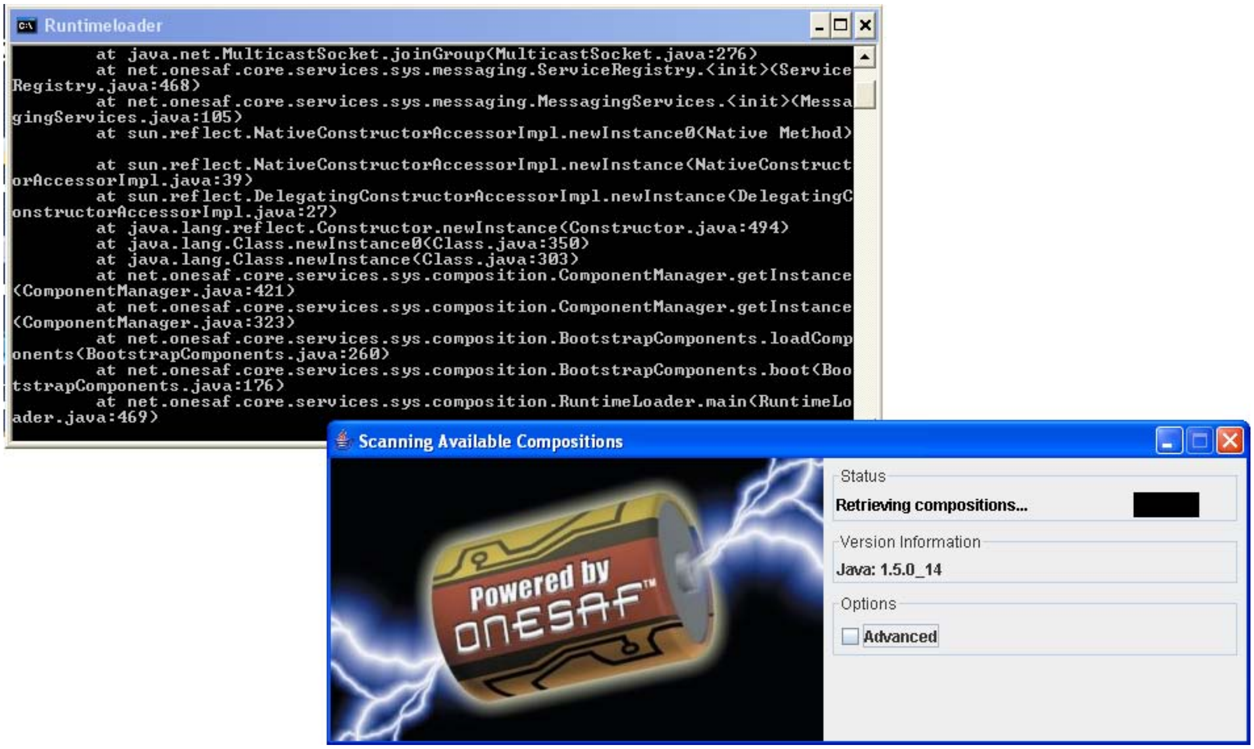
With Shortcut

- **Double LC the OneSAF Runtime Loader short cut located on the Windows™ desktop.**


Runtimeloader

3. Start-Up, Save, Stopping and Reloading, and Shut Down

The computer begins to process the start up request and displays the next 2 windows (*OneSAF Runtime Loader and Scanning Available Compositions).*


Runtimeloader
Scanning Available Compositions
Powered by ONESAF™

```
        at java.net.MulticastSocket.joinGroup(MulticastSocket.java:276)
        at net.onesaf.core.services.sys.messaging.ServiceRegistry.<init>(Service
Registry.java:468)
        at net.onesaf.core.services.sys.messaging.MessagingServices.<init>(Messa
gingServices.java:105)
        at sun.reflect.NativeConstructorAccessorImpl.newInstance0(Native Method)

        at sun.reflect.NativeConstructorAccessorImpl.newInstance(NativeConstruct
orAccessorImpl.java:39)
        at sun.reflect.DelegatingConstructorAccessorImpl.newInstance(DelegatingC
onstructorAccessorImpl.java:27)
        at java.lang.reflect.Constructor.newInstance(Constructor.java:494)
        at java.lang.Class.newInstance0(Class.java:350)
        at java.lang.Class.newInstance(Class.java:303)
        at net.onesaf.core.services.sys.composition.ComponentManager.getInstance
(ComponentManager.java:421)
        at net.onesaf.core.services.sys.composition.ComponentManager.getInstance
(ComponentManager.java:323)
        at net.onesaf.core.services.sys.composition.BootstrapComponents.loadComp
onents(BootstrapComponents.java:260)
        at net.onesaf.core.services.sys.composition.BootstrapComponents.boot(Boo
tstrapComponents.java:176)
        at net.onesaf.core.services.sys.composition.RuntimeLoader.main(RuntimeLo
ader.java:469)
```

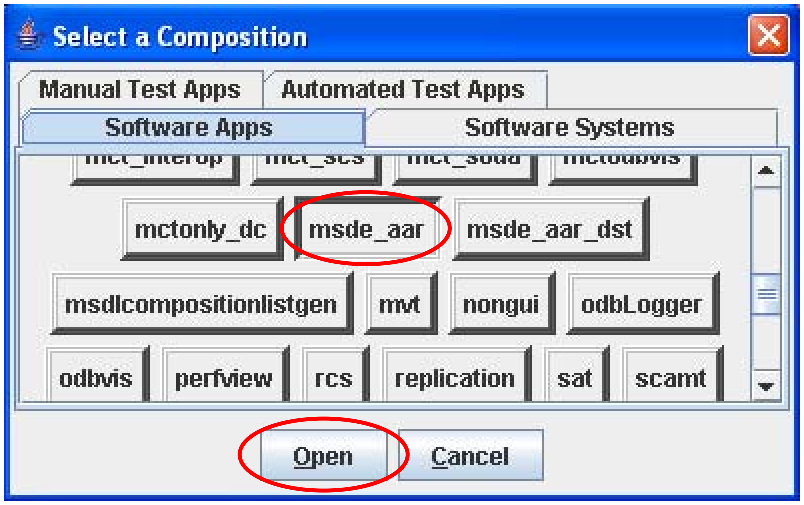
Status
Retrieving compositions...

Version Information
Java: 1.5.0_14

Options
☐ Advanced

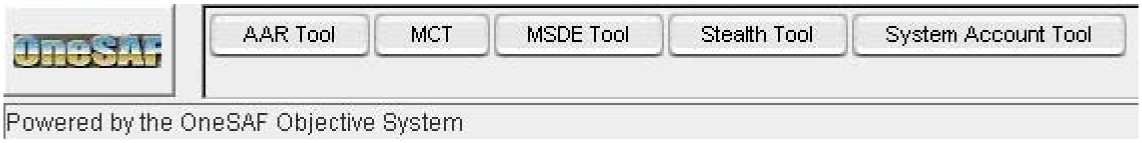
When the system has fully booted up the “Select a Composition” dialog box will appear with a list of software applications available for selection. Scroll down using the arrows or scroll bar located on the right side of the box until you get to “msde_aar”.

- LC on the “msde_aar” button.
- LC on the “Open” button.


Select a Composition
Manual Test Apps
Automated Test Apps
Software Apps
Software Systems
mctonly_dc
msde_aar
msde_aar_dst
msdlcompositionlistgen
mvt
nongui
odbLogger
odbvis
perfview
rcs
replication
sat
scamt
Open
Cancel

3. Start-Up, Save, Stopping and Reloading, and Shut Down – OneSAF Desktop

At the bottom of the Windows™ desktop screen the OneSAF desktop will open. The desktop will display the options available. In this particular case the options available are the AAR Tool, the MCT, the MSDE Tool, the Stealth Tool, and the System Account Tool.



Powered by the OneSAF Objective System

After Action Review (AAR) Tool - provides the capability to correlate, roll-up, and analyze simulation outputs and visualize the results of the simulation exercise. It provides the user with situation awareness during the execution of the exercise and afterwards during exercise playback. Situational awareness is achieved using a variety of visualization tools, including PVD display, 3D stealth display, video playback, radio/audio playback, and statistical charts.

Management & Control Tool (MCT) – The MCT is the only tool that is covered in this user guide.

Military Scenario Development Environment (MSDE) Tool - supports the definition of the Military Scenario that will be used in OneSAF simulation events. Military Scenarios include information such as overlays, control measures, terrain, weather, unit relationships, affiliations, and organization. In addition, the Military Scenario captures the results of mission planning, including plan objectives, scenario situation, and other data that supports execution matrices and related planning annexes. The MSDE provides the GUI-based operations for creation, deletion, modification and viewing of Military Scenarios.

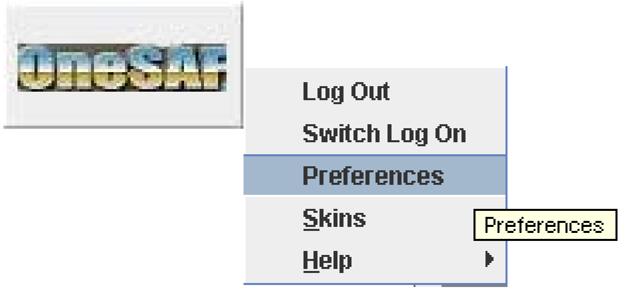
Stealth Tool –This tool provides a GUI-based mechanism to view the battlefield in three dimensions, including the display of entities, terrain and building interiors. It can also display dynamic battlefield events such as fires and detonations. The Stealth Tool provides the dynamic capability to position a three-dimensional viewpoint at any location and orientation within the battlefield. Its capabilities support monitoring and control activities essential for maintaining situational awareness during the simulation.

System Account Tool - provides support in the management of user accounts and privileges within the OneSAF system. The tool produces data in the form of a user account and its accompanying attributes.

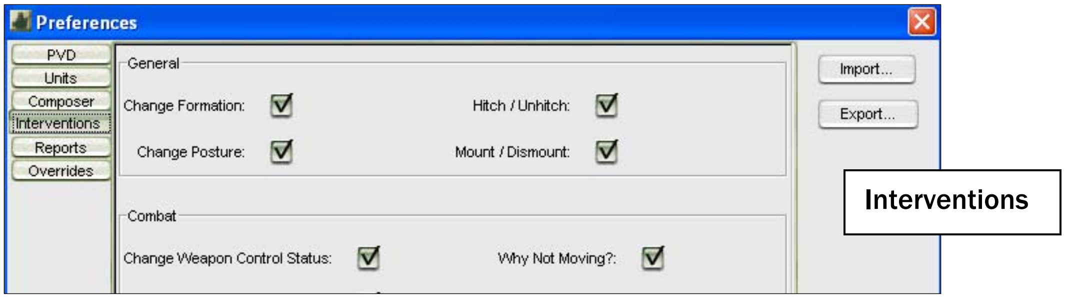
Set-Up Procedures

There is one additional critical button located on the OneSAF desktop. This button, labeled "OneSAF," opens a series of dialog boxes that allow you to set certain preferences for the simulation, these preferences affect the displays during the simulation but not the outcomes.

- **LC directly on the word "OneSAF".**
- **Mouse over the word "Preferences" and LC.**

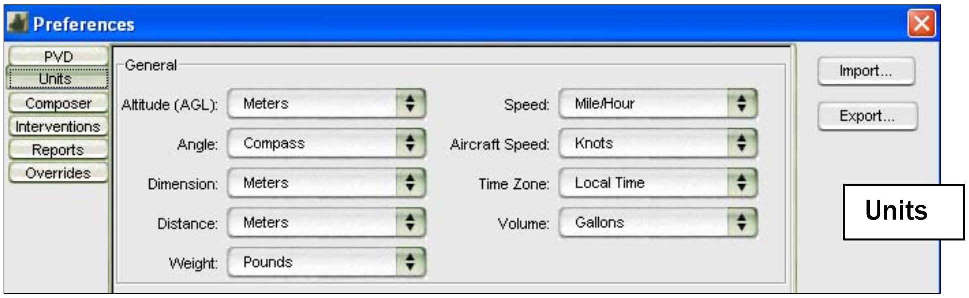

OneSAF
Log Out
Switch Log On
Preferences
Skins
Help
Preferences

The "Preference" dialog box has 6 different preference selection areas. These areas are accessed by the 6 small buttons located in the upper left corner of the dialog box. The 6 buttons are PVD, Units, Composer, Interventions, Reports, and Overrides. Each selection area has controls that allow you to modify the simulation displays. For a simple scenario the Composer, Reports, and Overrides buttons can be left untouched. Samples of the Interventions, Units and PVD screens are shown below. They identify the areas you can modify to change the display of the PVD (e.g. enabling control measure names), the units of measure (e.g. km vs. miles), or the interventions available to apply to the unit or entity (e.g. slow down, mount/dismount, fire, etc).

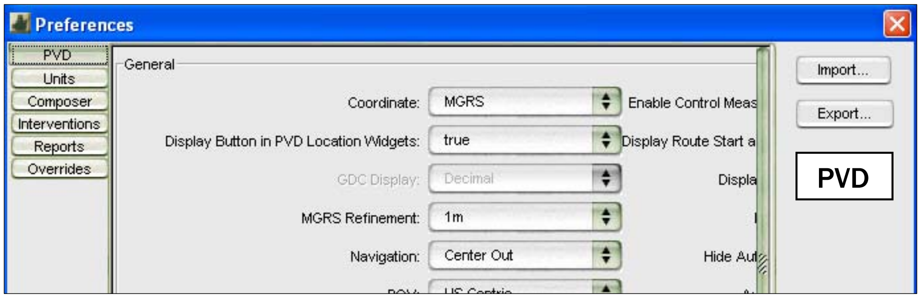

Preferences
PVD
Units
Composer
Interventions
Reports
Overrides
Import...
Export...
Interventions

General
Change Formation: ☑ Hitch / Unhitch: ☑
Change Posture: ☑ Mount / Dismount: ☑

Combat
Change Weapon Control Status: ☑ Why Not Moving?: ☑


Preferences
PVD
Units
Composer
Interventions
Reports
Overrides
Import...
Export...
Units

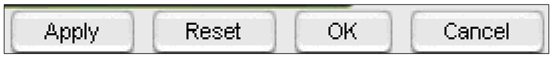
General
Altitude (AGL): Meters
Angle: Compass
Dimension: Meters
Distance: Meters
Weight: Pounds
Speed: Mile/Hour
Aircraft Speed: Knots
Time Zone: Local Time
Volume: Gallons


Preferences
PVD
Units
Composer
Interventions
Reports
Overrides
Import...
Export...
PVD

General
Coordinate: MGRS
Display Button in PVD Location Widgets: true
GDC Display: Decimal
MGRS Refinement: 1m
Navigation: Center Out
Enable Control Meas
Display Route Start a
Displa
Hide Aut

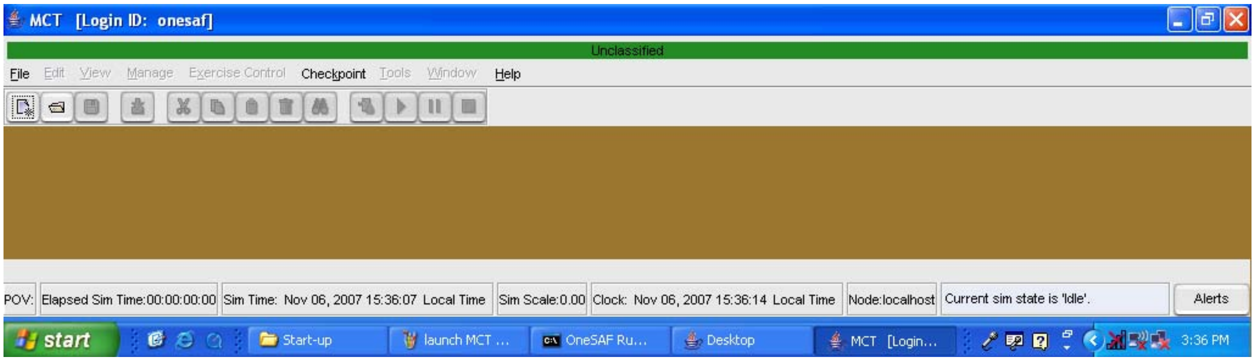
Ensure that MGRS Is selected as the unit of measure for coordinates! If not already set for MGRS, Do it now.

Once you have selected the preferences you wish to apply to the scenario, LC the "Apply" button located in the lower right corner of the screen, then LC the "OK" button.


Apply
Reset
OK
Cancel

Obtaining a Scenario

To continue the start-up procedures, you need to select the MCT button on the OneSAF desktop. When selected, the system will process the request and display the MCT screen. You are now ready to open a new scenario OR load a previously built and saved scenario.

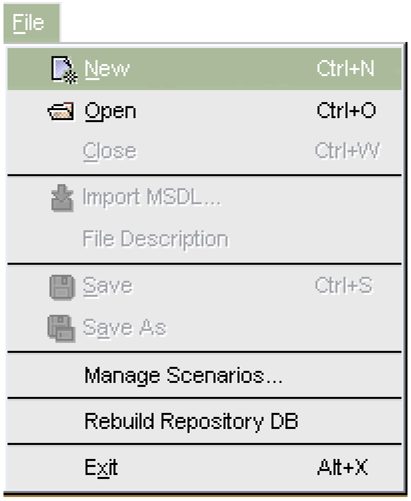

MCT [Login ID: onesaf]
Unclassified
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
Alerts
start
Start-up
launch MCT ...
OneSAF Ru...
Desktop
MCT [Login...
3:36 PM

POV:
Elapsed Sim Time:00:00:00:00
Sim Time: Nov 06, 2007 15:36:07 Local Time
Sim Scale:0.00
Clock: Nov 06, 2007 15:36:14 Local Time
Node:localhost
Current sim state is 'Idle'.

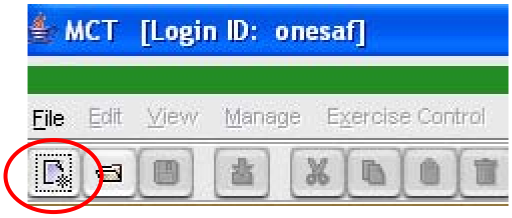
Open a New Scenario

There are 2 ways to open a new scenario.

- You can LC on "File" on the top tool bar and then mouse over and LC "New" OR
- You can LC once on the "Create a New Simulation" button.


File
New Ctrl+N
Open Ctrl+O
Close Ctrl+W
Import MSDL...
File Description
Save Ctrl+S
Save As
Manage Scenarios...
Rebuild Repository DB
Exit Alt+X

OR


MCT [Login ID: onesaf]
File
Edit
View
Manage
Exercise Control

The system will process the request and display the MCT screen with the PVD, Mission Editor, and Status windows open.

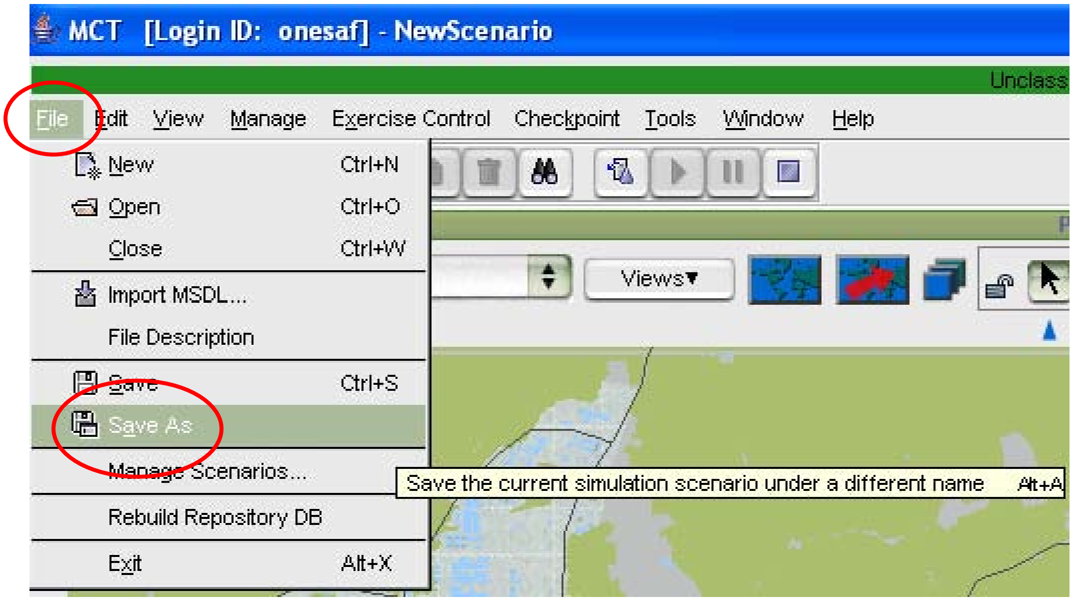
The default terrain displayed in the PVD is a portion of the Southwest Asia terrain database at a scale of 1/50,000. The Mission Editor and the Status windows at the bottom of the display will be blank.

This scenario is named "New Scenario" as displayed in the upper left corner of the MCT window (see next page). Now is a good time to rename and save the scenario in your folder. How to save a scenario is described next.

Save a Scenario

The next step is to save the scenario. The OneSAF software has an "auto save" mode that can be toggled on and off in the PVD preferences window. However, depending on your system requirements, the "auto save" mode might cause your system to run slowly. If you elect to toggle off the "auto save" mode, then you must remember to save the scenario each time you make any changes and before you initialize the scenario prior to running the simulation. If you do not save the scenario you will lose any changes made prior to initializing.

Saving the scenario is very similar to saving a new document in Microsoft Word.

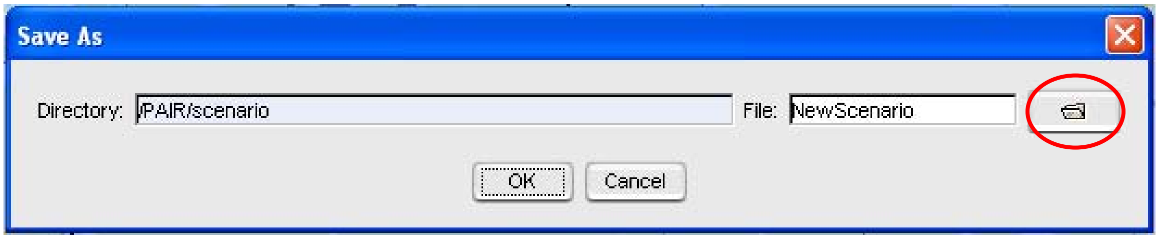

MCT [Login ID: onesaf] - NewScenario
Unclass
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
New Ctrl+N
Open Ctrl+O
Close Ctrl+W
Import MSDL...
File Description
Save Ctrl+S
Save As
Manage Scenarios...
Rebuild Repository DB
Exit Alt+X
Views▾
Alt+A

Save the current simulation scenario under a different name

- LC "File" on the MCT window.

- Mouse over "Save as" and LC.

In the next pop-up window, LC the folder button on the far right to access the directory where you will create a personal folder in which to store your simulation scenarios.

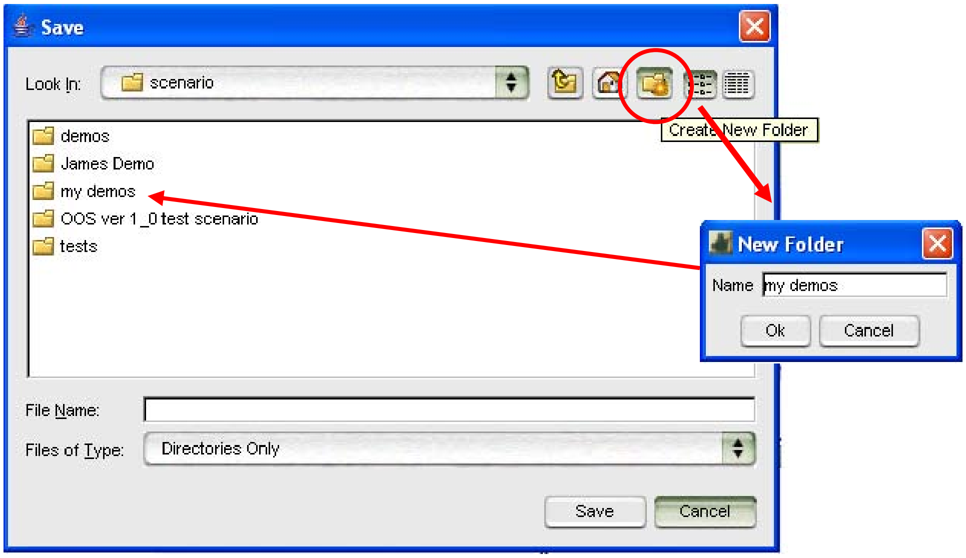

Save As
OK
Cancel

Directory: /PAIR/scenario

File: NewScenario

3. Start-Up, Save, Stopping and Reloading, and Shut Down – Save a Scenario

After LC on the “Folder” button, you will see the following “Save” window. The “Save” pop-up window, similar to a Microsoft Windows directory, is where you will create and name a new folder to store the scenarios. First LC on the “Create a New Folder” button on the top tool bar. A small pop-up dialog box appears in which to name your new folder. In this example, we have named the new folder “my demos”. Once you have named the folder, LC “Ok” and the folder will appear in the “Save” window.



Look In: scenario

demos
James Demo
my demos
OOS ver 1_0 test scenario
tests

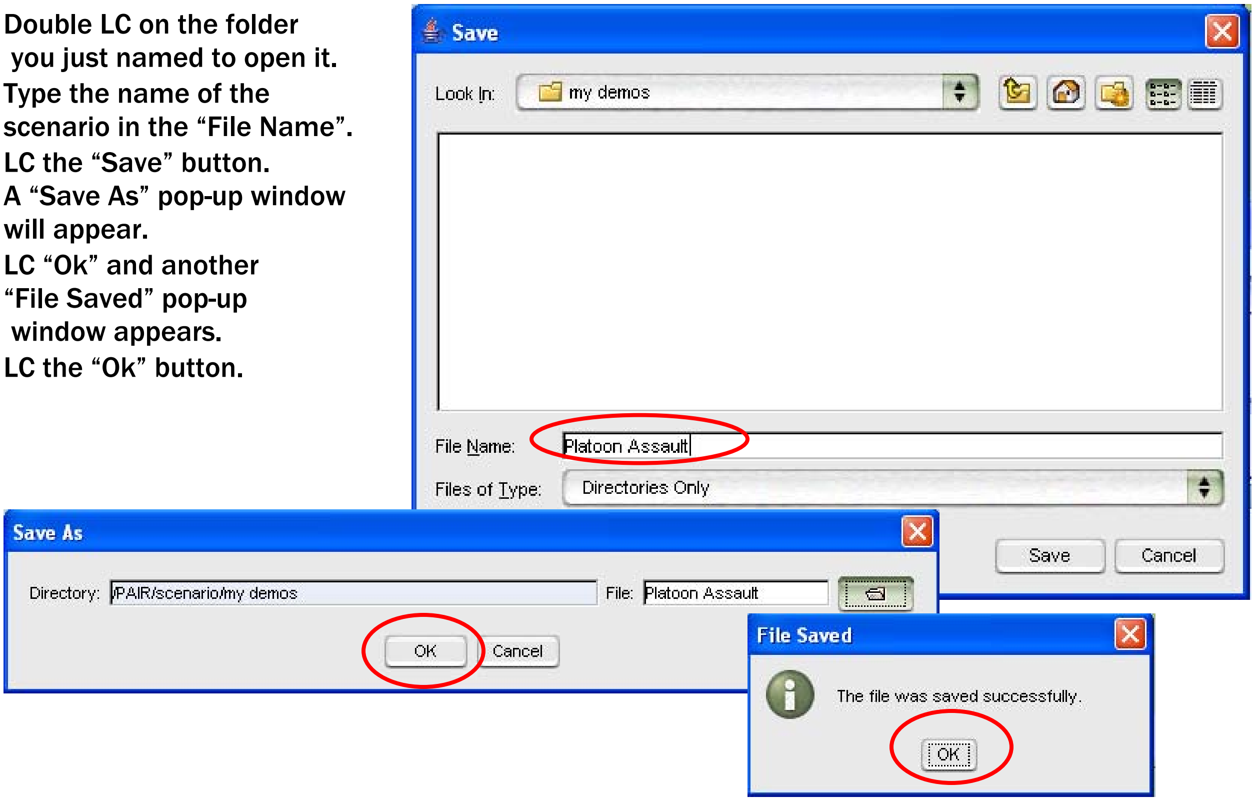
Name: my demos

File Name:

Files of Type: Directories Only

There is one more required step before you can name the scenario and save it.

- Double LC on the folder you just named to open it.
- Type the name of the scenario in the “File Name”.
- LC the “Save” button. A “Save As” pop-up window will appear.
- LC “Ok” and another “File Saved” pop-up window appears.
- LC the “Ok” button.



Look In: my demos

File Name: Platoon Assault

Files of Type: Directories Only

Directory: /PAIR/scenario/my demos File: Platoon Assault

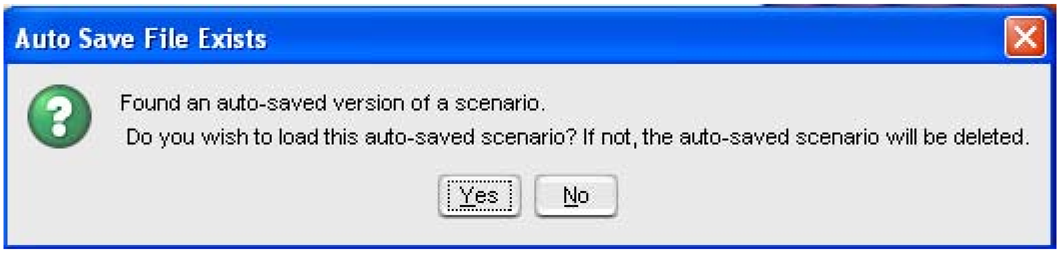
The file was saved successfully.

Save Procedures Troubleshooting

There are times when this version of OneSAF (version 2.0) will not allow you to "save" an updated scenario, but will only allow you to "save as". This issue manifests while you are working within the Mission Editor and have not made any major changes to the Task Organization or the graphic control measures.

In order to save the scenario without having to rename it, and to protect the scenario version numbering system, you must add or delete an entity/unit in the task organization window or add or delete a graphic control measure from the PVD.

OneSAF also has the capability of auto saving the scenarios as you build them just in case your computer crashes. This process does not save the scenario as a different version, but is more like an auto recovery process similar to Microsoft's document recovery. When you reboot your computer, reload OneSAF, and access the same scenario that was open when the computer crashed, an auto recovery window will appear asking you if you want to use the auto saved version of the scenario.



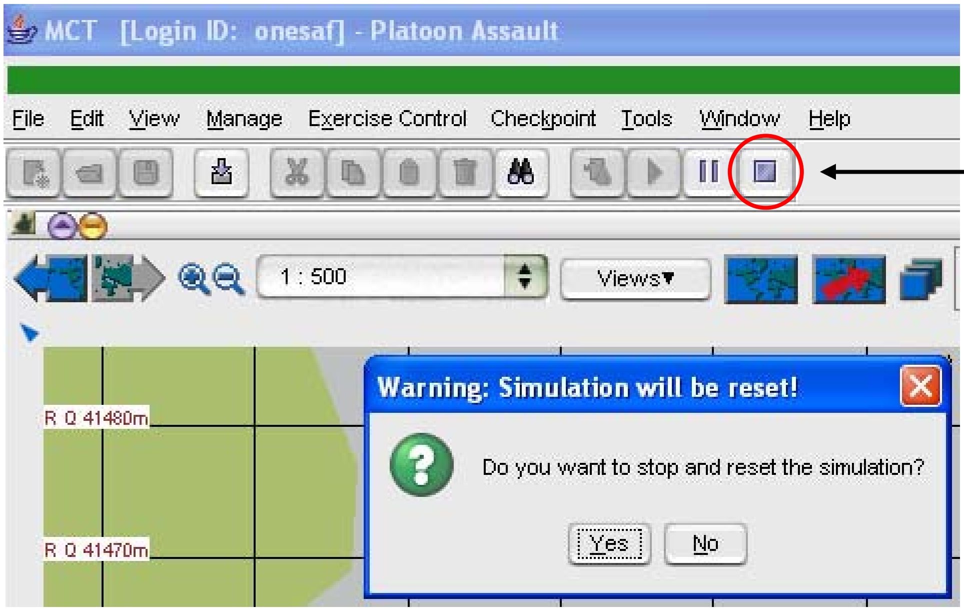
Found an auto-saved version of a scenario.
Do you wish to load this auto-saved scenario? If not, the auto-saved scenario will be deleted.

LC on "Yes" and OneSAF will reload the scenario at the last auto saved version. In order to completely save the scenario you must revert to the steps above; either add or delete from the Task Organization window or a control measures.

Stopping and Reloading a Scenario

At the completion of the simulation it is necessary to stop the scenario prior to restarting the same scenario or loading a different one. Once stopped, the scenario resorts to the last saved version, this is why it is imperative to save the scenario before you initialize it.

To stop the scenario


MCT [Login ID: onesafj] - Platoon Assault
File Edit View Manage Exercise Control Checkpoint Tools Window Help
1 : 500
Views▾
R Q 41480m
R Q 41470m
Warning: Simulation will be reset!
Yes
No

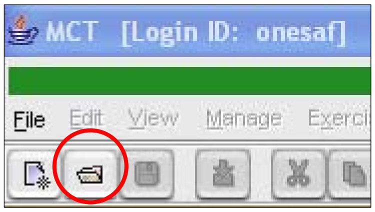
Do you want to stop and reset the simulation?

- **LC the stop button.**
- **LC the "Yes" button in the pop-up window.**

At this point the initial brown MCT screen, as shown on page 2-2, will be displayed and the scenario has been reset back to its previous format before initializing. At this point you have 2 options, 1. Reload the same or a different scenario; or 2. Exit the MCT.

To reload a scenario

- **LC on the "Open an existing simulation button".**

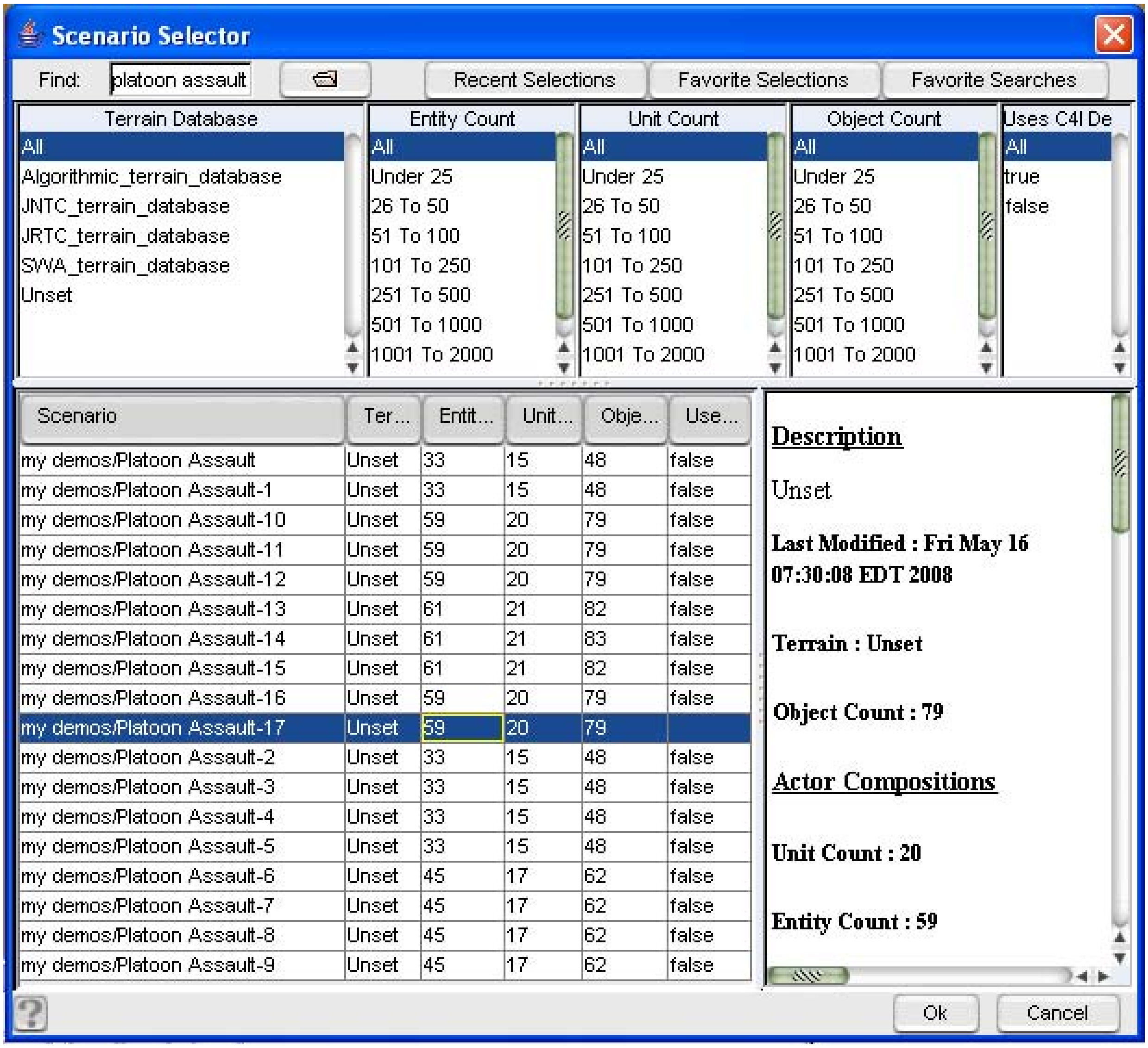

MCT [Login ID: onesaf]
File Edit View Manage Exerci

The "Scenario Selector" pop-up window will appear with a list of all the saved scenarios currently in the repository database.

To select a scenario

If each scenario you develop has a unique name you can filter out all other scenarios selections by typing the name of the scenario into the “Find” box. The list of scenarios that appears is the multiple saved version of the original scenario. The most current version is the scenario with the highest number. In this example “my demos/Platoon Assault-17 is the most current version (or last version saved). Every time you save the scenario the system will add another version to the overall scenario file.

- **Type scenario name into the “Find” box**
- **Hit the “Enter” key on your keyboard (the system filters the list to only those scenarios with the keys words entered in the “Find” box)**
- **LC, drag, and release the right side of the scenario column to expand the column width.**
- **LC and highlight the scenario desired.**
- **LC the “Ok” button in the lower right corner of the window.**


Scenario Selector
Recent Selections
Favorite Selections
Favorite Searches
Terrain Database
All
Algorithmic_terrain_database
JNTC_terrain_database
JRTC_terrain_database
SWA_terrain_database
Unset
Entity Count
Unit Count
Object Count
All
Under 25
26 To 50
51 To 100
101 To 250
251 To 500
501 To 1000
1001 To 2000
Uses C4I De
All
true
false
Ok
Cancel

Find: platoon assault

Scenario	Ter...	Entit...	Unit...	Obje...	Use...
my demos/Platoon Assault	Unset	33	15	48	false
my demos/Platoon Assault-1	Unset	33	15	48	false
my demos/Platoon Assault-10	Unset	59	20	79	false
my demos/Platoon Assault-11	Unset	59	20	79	false
my demos/Platoon Assault-12	Unset	59	20	79	false
my demos/Platoon Assault-13	Unset	61	21	82	false
my demos/Platoon Assault-14	Unset	61	21	83	false
my demos/Platoon Assault-15	Unset	61	21	82	false
my demos/Platoon Assault-16	Unset	59	20	79	false
my demos/Platoon Assault-17	Unset	59	20	79	
my demos/Platoon Assault-2	Unset	33	15	48	false
my demos/Platoon Assault-3	Unset	33	15	48	false
my demos/Platoon Assault-4	Unset	33	15	48	false
my demos/Platoon Assault-5	Unset	33	15	48	false
my demos/Platoon Assault-6	Unset	45	17	62	false
my demos/Platoon Assault-7	Unset	45	17	62	false
my demos/Platoon Assault-8	Unset	45	17	62	false
my demos/Platoon Assault-9	Unset	45	17	62	false

Description

Unset

Last Modified : Fri May 16 07:30:08 EDT 2008

Terrain : Unset

Object Count : 79

Actor Compositions

Unit Count : 20

Entity Count : 59

The other options to select a scenario include scrolling through all of the scenarios in the repository database, or using the “Recent Selections”, or “Favorite Selections” button.

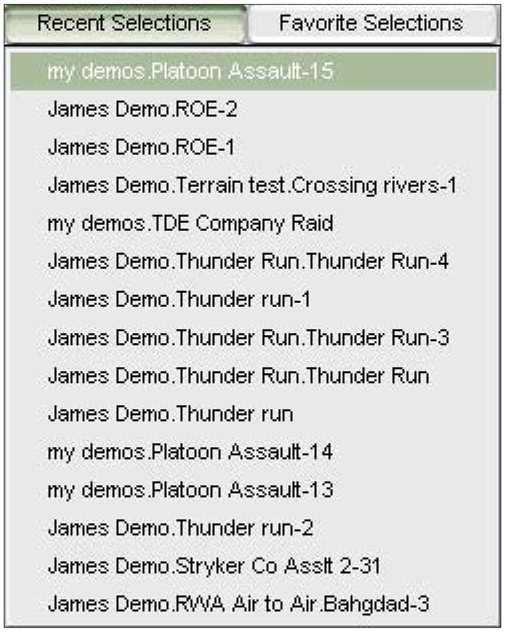
To scroll through all of the scenarios;

- LC and hold the scroll bar located between the “Uses C4I Device” column and the “Description” box.

To use the “Recent Selections” button;

- LC the “Recent Selections” button
- Mouse over the scenario
- LC the scenario

Take note here. The most recently selected scenario might not be the most current version saved. Double check before selecting, changing, and saving the scenario and overriding any previous work.

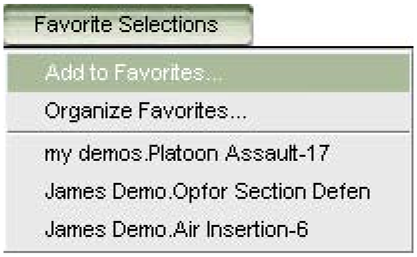

Recent Selections
Favorite Selections
my demos.Platoon Assault-15
James Demo.ROE-2
James Demo.ROE-1
James Demo.Terrain test.Crossing rivers-1
my demos.TDE Company Raid
James Demo.Thunder Run.Thunder Run-4
James Demo.Thunder run-1
James Demo.Thunder Run.Thunder Run-3
James Demo.Thunder Run.Thunder Run
James Demo.Thunder run
my demos.Platoon Assault-14
my demos.Platoon Assault-13
James Demo.Thunder run-2
James Demo.Stryker Co Asslt 2-31
James Demo.RWA Air to Air.Bahgdad-3

To use the “Favorite Selections” button you must first add the scenario to the “Favorite Selections” list;

- LC the scenario in the “Scenario Selector” window that you want to add
- LC the “Favorite Selections” button
- LC “Add to Favorites”

To use the “Favorite Selections” button

- LC the “Favorite Selections” button
- Mouse over the scenario
- LC the scenario


Favorite Selections
Add to Favorites...
Organize Favorites...
my demos.Platoon Assault-17
James Demo.Opfor Section Defen
James Demo.Air Insertion-6

Again, take note, the scenario in the favorite selections might not be the most current scenario. The list of favorite selections will not automatically update when you develop a new version and save it.

Shut Down Procedures

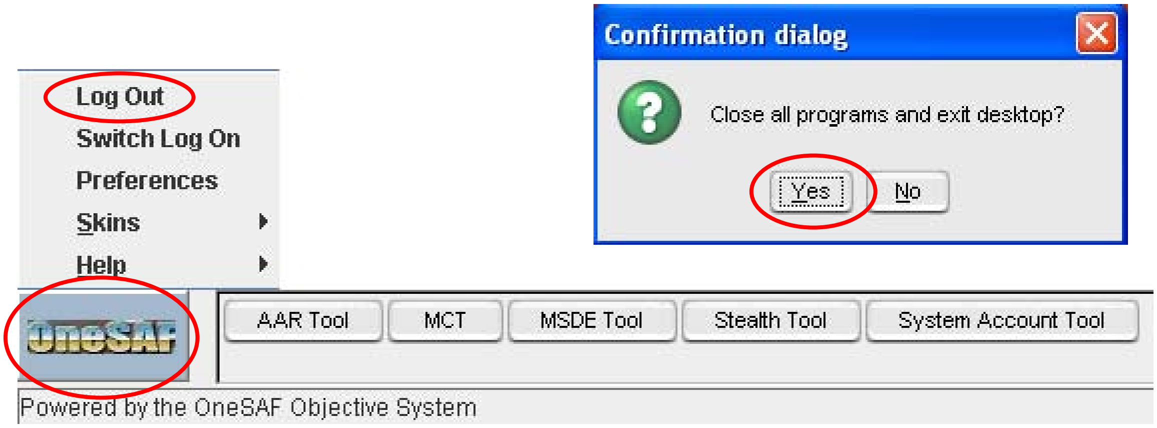
Shutting down the OneSAF simulation software is a one-step process that is similar to logging off or shutting down a computer.

To shut down OneSAF

- **LC the “OneSAF” button on the desktop**
- **LC “Log Out**

The “Confirmation Dialog” pop-up window will appear.

- **LC “Yes”**


Log Out
Switch Log On
Preferences
Skins
Help
OneSAF
AAR Tool
MCT
MSDE Tool
Stealth Tool
System Account Tool
Powered by the OneSAF Objective System
Confirmation dialog
Yes
No

Close all programs and exit desktop?

Creating a Basic Scenario

This chapter provides brief lessons that guide you through the process of creating a simple simulation scenario while using the workspace and tools of the OneSAF simulation software. The processes follow a common workflow that can be applied to all scenario building. The common workflow throughout OneSAF is that you must select units before you can draw control measures, and you must draw the control measures before you can assign the missions/tasks. The chapter will follow the sequence listed below with the processes discussed in detail.

The thought processes involved in creating a simulation are very similar to those used in Troop Leading Procedures (TLP). During step-3 of TLP, Make a Tentative Plan, you would analyze the mission and develop, analyze, compare, and choose a Course of Action (COA). Development of a simulation scenario can assist you in these processes. As with any plan, a concept sketch should be drawn to assist you in the plans development. This concept sketch becomes the basis for the simulation scenario and can be used as a guide when drawing the graphic control measures. As a stand alone user the additional steps of selecting, positioning, and controlling the enemy forces must be considered and completed.

The table below addresses which tasks are accomplished in which of the OneSAF windows previously discussed. Some of the tasks require inputs in multiple windows. Each task is explained in this chapter.

Tasks*	**Window**				
	PVD	Mission Editor	Task Organization	Status	MCT Tool Bar
Locate, Select, and Load the Terrain Database					X
Select and Place Forces/Units/Entities on a Map	X		X		
Configure the Force to Match a Desired Task Organization			X	X	
Place Control Measures on a Map	X				
Assign Tasks to Entities and Units		X			X
Run a Scenario		X			X
Stop and Reload a Scenario					X

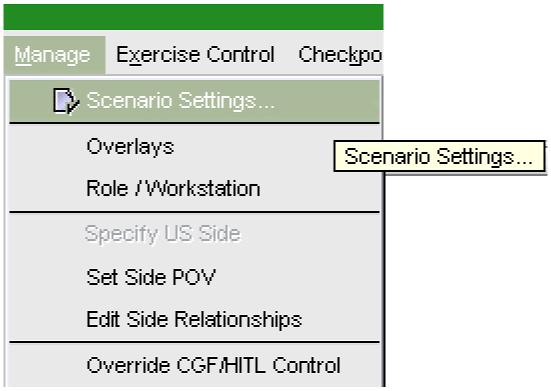
*This is the order followed to complete building a scenario

Locate, Select, and Load the Terrain Database

The default terrain database is the Southwest Asia database at a scale of 1/50,000; however, there are currently 4 additional terrain databases listed in the scenario settings dialog box available for selection. All 5 have recognizable features. However, it helps to have known grid coordinates or a paper map for reference. The additional databases available are the Joint Readiness Training Center (JRTC) (Fort Polk, LA), Joint National Training Center (JNTC) (Marine Corps Air Ground Combat Center 29 Palms and Fort Irwin, CA), the National Training Center (NTC) (Fort Irwin, CA), and Fort Hood, TX databases.

These terrain databases are accessed from the MCT toolbar by,

- **LC on the word "Manage".**
- **Mouse over "Scenario Settings" and LC.**

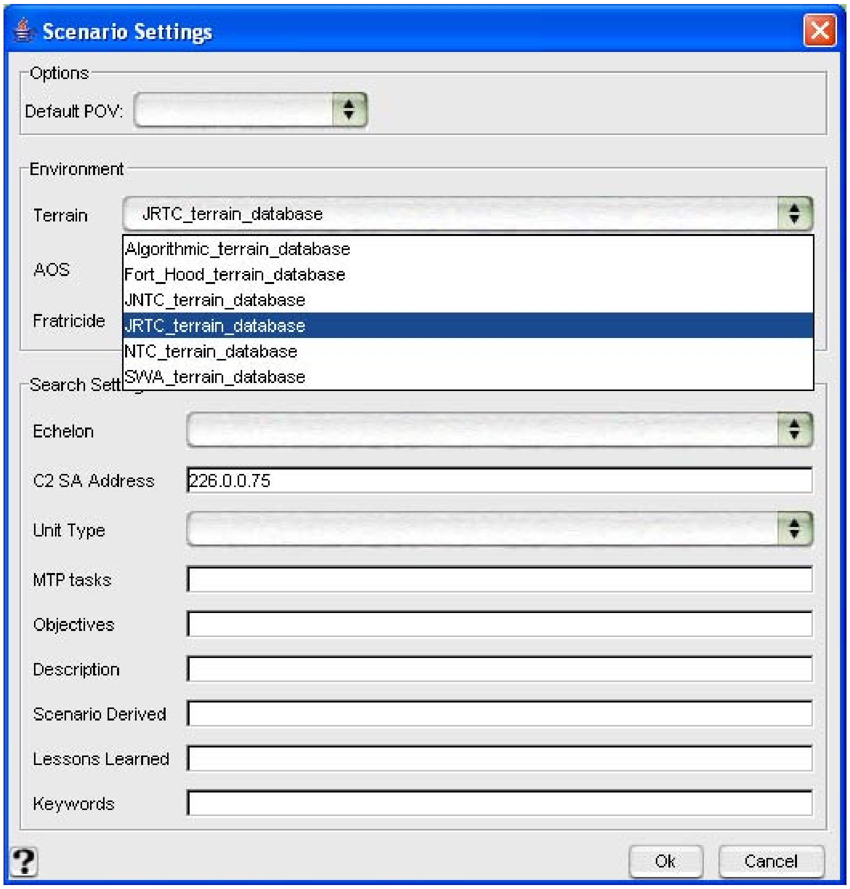

Manage
Exercise Control
Checkpo
Scenario Settings...
Overlays
Scenario Settings...
Role / Workstation
Specify US Side
Set Side POV
Edit Side Relationships
Override CGF/HITL Control

When loading a terrain data base is it best to know the grid coordinates of interest for easy reference. You will use them in the very first steps of scenario development. Also suggest having a paper map as a reference.

4. Creating a Basic Scenario – Locate, Select, and Load the Terrain Database

The "Scenario Settings" dialog box is split into 3 sections: the Options section, the Environment section, and the Search Settings section. The environmental section is where you select the terrain database and area of sight (unavailable in version 2.0) for your scenario. The "Terrain" line has a drop-down menu that when activated reveals the databases available.

- **LC the drop-down arrows at the right of the "Terrain" line.**
- **Mouse over the JRTC_terrain_ database and LC once.**
- **LC the "Ok" button at the bottom of the dialog box.**


Scenario Settings
Options
Default POV:
Environment
AOS
Fratricide
Algorithmic_terrain_database
Fort_Hood_terrain_database
JNTC_terrain_database
JRTC_terrain_database
NTC_terrain_database
SWA_terrain_database
Search Sett
Echelon
Unit Type
MTP tasks
Objectives
Description
Scenario Derived
Lessons Learned
Keywords
Ok
Cancel

Terrain: JRTC_terrain_database

C2 SA Address: 226.0.0.75

The PVD screen will automatically switch between the databases and update the graphical representation of the database at the current map scale chosen.

The OneSAF software has a "Go to Coordinates" tool available to assist in navigating the terrain database. The dialog box is used to show the section of the terrain where you want to place forces. This tool will only assist you if you have the coordinates of the location you wish to navigate to. To use the tool,

- **LC the "Go to Coordinates" button on the PVD toolbar.**

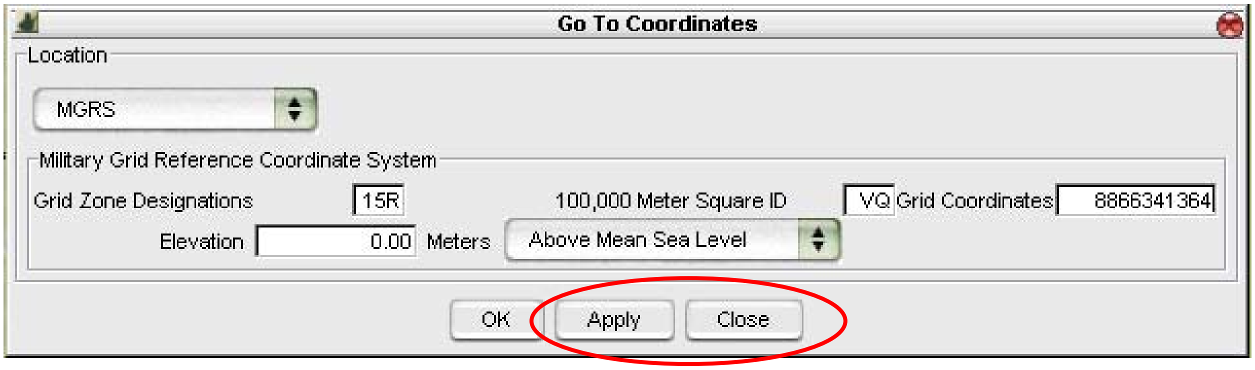
4. Creating a Basic Scenario – Locate, Select, and Load the Terrain Database

With the "Go to Coordinates" button using MGRS, you must input the Grid Zone designator, the 100,000 meter square identifier, and at a minimum a 4-digit grid coordinate.

- LC the "Apply" button after you have input all the information required. The PVD screen will automatically adjust and center the screen on the inputted coordinates.

- LC on "Close" for this dialog box to disappear.

The grid coordinates entered in the example below, 15R VQ 88663 41364, are to the center of the Shugart-Gordon complex at JRTC, zoom in to 1/12,500 scale to get a better look at the town. You can check the grid coordinate by moving the mouse over the PVD screen and looking at the displayed MGRS grid in the lower right corner of the PVD screen.


Go To Coordinates

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 15R

100,000 Meter Square ID: VQ

Grid Coordinates: 8866341364

Elevation: 0.00 Meters

Above Mean Sea Level

Here are some grid coordinates to key terrain at each location;

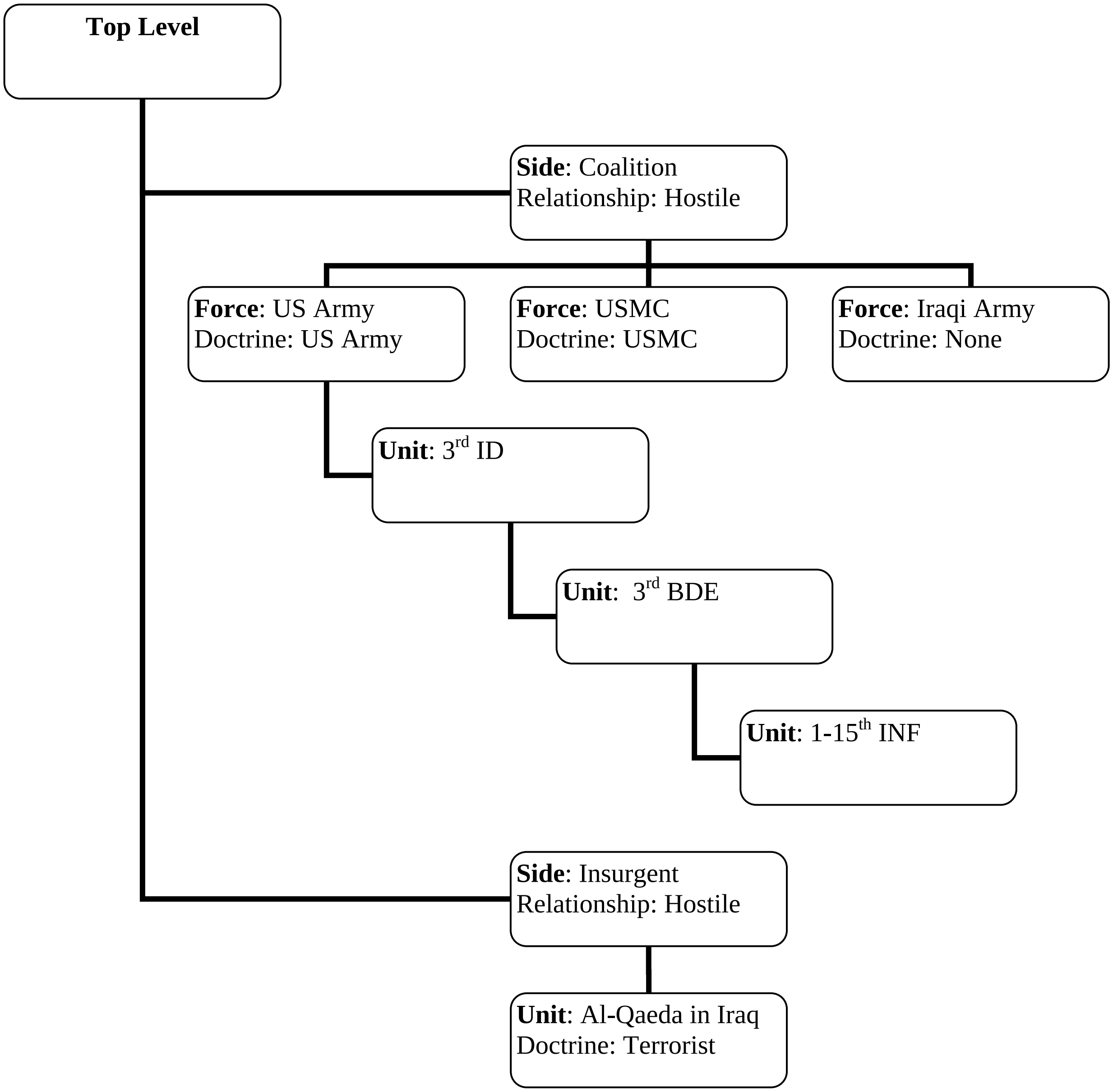
11S NV 46420 14260 – Central Corridor @ Fort Irwin (NTC or JNTC Database)
11S NV 33460 03970 – Bicycle Lake @ Fort Irwin (NTC and JNTC Database)
11S NT 86443 89415 – South MCAS 29 Palms (JNTC Database)
15R VQ 88663 41364 – Shugart Gordon MOUT Facility @Fort Polk (JRTC Database)
15R VQ 84384 42331 – North Fort Polk (JRTC Database)
38S MB 44381 85495 – Green Zone, Baghdad, Iraq (SW Asia Database)
38S MB 28485 80693 – Baghdad International Airport (SW Asia Database)

In Chapter 2, the navigation button was cited as another method of navigating around the PVD screen. This information is repeated here to remind you of that tool. However, for initially centering the PVD on the terrain of interest, the "Go to Coordinates" technique is recommended.

The navigation button has 2 methods of navigating around the PVD screen. First, you can center the PVD screen on the desired location by LC on the button, and then LC on the desired location on the map. Second, you can draw a box (similar to Windows™ LC drag and release) around a particular piece of terrain you want to zoom in on (the smaller the box the tighter the zoom level).

Select and Place Forces/Units/Entities on the Map

OneSAF simulation software has the capability of adding multiple sides, forces, units, and entities that fight under different doctrine and have "Friendly", "Hostile", "Neutral", and "Unknown" relationships towards each other. The hierarchy of the task organization window consists of a top level to which multiple "Sides" can be added. Each Side (e.g. Coalition, Insurgents, Tribe) has 1 of the 4 relationships (Friendly, Hostile, Neutral, and Unknown) with each other Side. Each Side can have multiple "Forces" that fight or act under different doctrines but have the same relationship to each other (e.g. Iraqi Army (Force), U.S. Army (Force), with a "Friendly" side relationship). Each force can have multiple "Units" or "Entities" that will fight or act using the proscribed doctrine. The organizational chart below shows 2 Sides; one side with multiple Forces, of which one Force has multiple Units; and one Side with a single Unit.


Top Level
Side: Coalition
Relationship: Hostile
Force: US Army
Doctrine: US Army
Force: USMC
Doctrine: USMC
Force: Iraqi Army
Doctrine: None
Unit: 3rd ID
Unit: 3rd BDE
Unit: 1-15th INF
Side: Insurgent
Relationship: Hostile
Unit: Al-Qaeda in Iraq
Doctrine: Terrorist

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

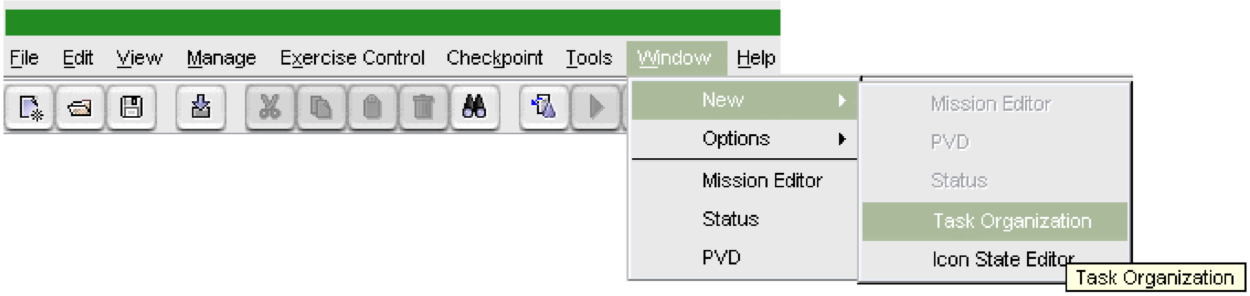
The addition of multiple Sides and the definition of the side relationships are covered in more depth in Appendix B.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

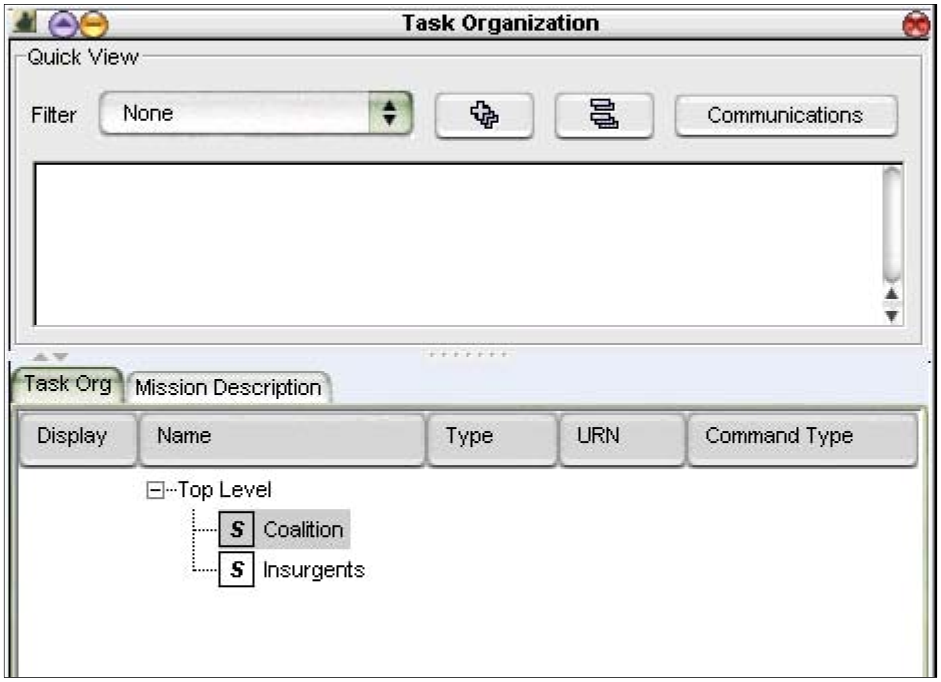
In keeping with this chapter, “Creating a Basic Scenario”, you will learn how to create 1 friendly unit. The steps you follow here can be applied to all entities and units regardless of affiliation.

Selecting forces and positioning them on the map (terrain database) is a time consuming process. The same steps are used whether you are placing a single entity or unit for the first time. However, if you are going to place like-type units or entities you have the capability to copy, paste, and rename them, saving time. To start creating entities or units begin by,

- LC on the word “Window” in the MCT toolbar.
- Mouse over the word “New” in the first pop-up window.
- LC on the words “Task Organization” in the second pop-up window. The “Task Organization” window will appear.

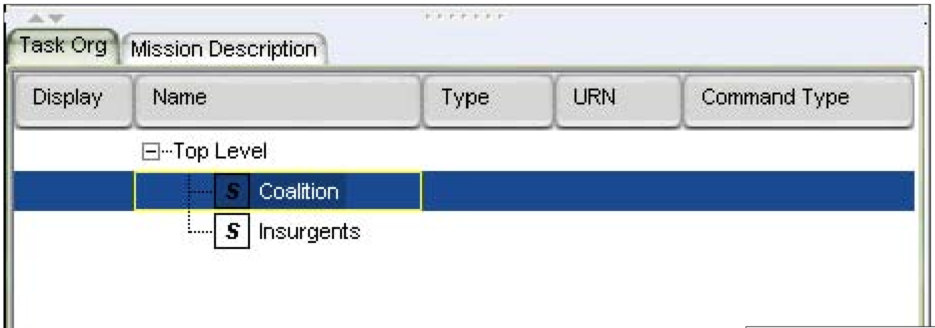

File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
New
Options
Mission Editor
Status
PVD
Mission Editor
PVD
Status
Task Organization
Icon State Editor
Task Organization

As stated earlier in the guide, the window is split into 2 sections; we will concern ourselves with the lower section and the “Task Org” tab. The window displays the two default sides “Coalition” and “Insurgents” when first opened. These 2 sides are hollow and must have forces, units, or entities added to them to create a task organization.

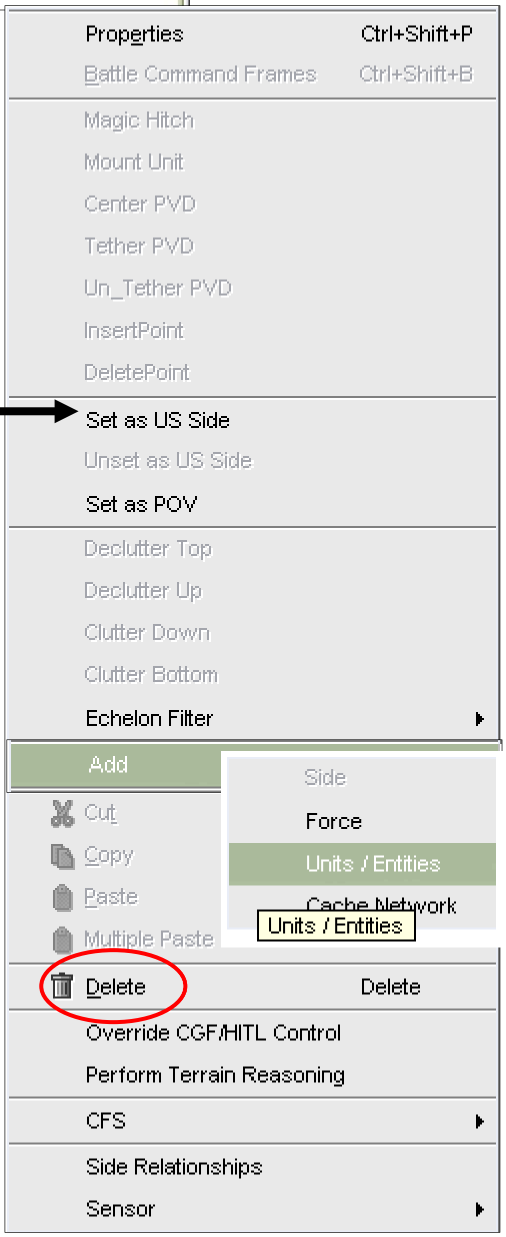

Task Organization
Quick View
Filter
None
Communications
Task Org
Mission Description
Display
Name
Type
URN
Command Type
Top Level
S Coalition
S Insurgents

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

Adding friendly and enemy units to the “Coalition” and “Insurgents” follow the same steps except for step 3 below. Adding units is a multi-step process. This example adds units to the “Coalition” side.


Task Org
Mission Description
Display
Name
Type
URN
Command Type
Top Level
Coalition
Insurgents

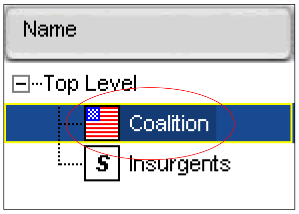
- 1. LC on the word Coalition to highlight it.
- 2. Immediately RC on the word Coalition.


Properties Ctrl+Shift+P
Battle Command Frames Ctrl+Shift+B
Magic Hitch
Mount Unit
Center PVD
Tether PVD
Un_Tether PVD
InsertPoint
DeletePoint
Set as US Side
Unset as US Side
Set as POV
Declutter Top
Declutter Up
Clutter Down
Clutter Bottom
Echelon Filter
Add
Side
Force
Units / Entities
Cache Network
Units / Entities
Cut
Copy
Paste
Multiple Paste
Delete
Delete
Override CGF/HITL Control
Perform Terrain Reasoning
CFS
Side Relationships
Sensor

A pop-up window will appear. This pop-up window has key commands you will use throughout all the lessons; but for this lesson we only focus on the commands “Set as US Side” and “Add”. Steps 3 and 4 apply only to the Coalition.

- 3. LC once on “Set as US Side”.

The pop-up window will disappear, and you will notice a small US Flag has appeared next to the word “Coalition”.


Name
Top Level
Coalition
Insurgents

- 4. RC on the word Coalition, to redisplay the pop-up window.
- 5. Mouse over “Add”.
- 6. Mouse over “Unit/Entities” and LC once.

If you select and add the wrong type of unit, or wish to change the unit, then first delete the unit by

- Highlighting the unit to delete.
- Mouse over “Delete” and LC once.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

Create Actors Window

The next window to appear is the “Create Actors” window. This window will appear every time you want to add additional entities/units to the simulation.

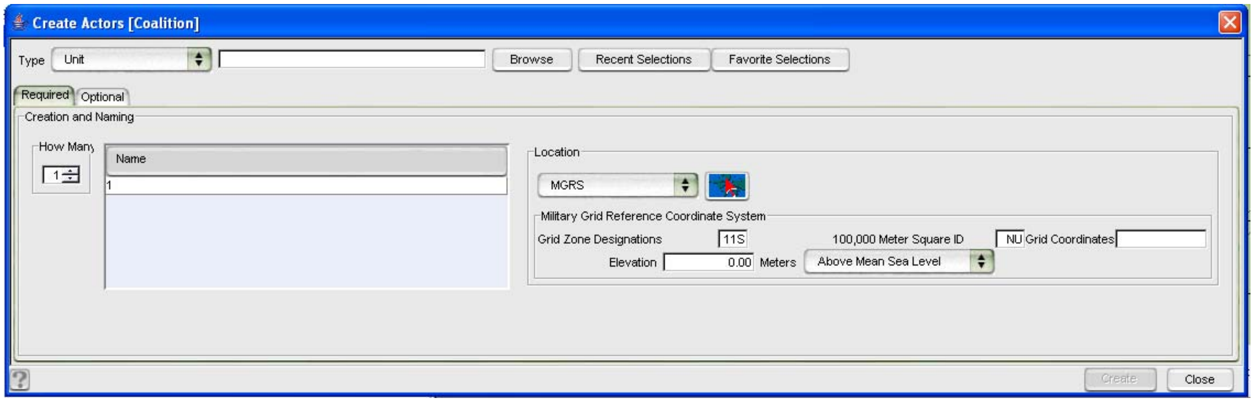
The Create Actors window is the means to access the two separate databases that contain the entities and units available for selection.

The entity database contains an alphabetized list of individual wheeled and track vehicles, rotary and fixed wing aircraft, an array of sensors and other military equipment, and individual combatants and non-combatants.

The unit database contains a similar alphabetized list, but this time it is of units that range from the Team level to the Brigade level and span every conceivable unit in military organizations.

Both lists have entities or units that are non-combatants, terrorists, or based on Soviet doctrinal units.

The window will require you to select the type and size of entity/unit, name the entity/unit, place it in a movement formation and an orientation for movement, and lastly place the entity/unit on the terrain at a location of your choice. To assist you in this process there are a few key buttons in this window that need some explaining before continuing.


Create Actors [Coalition]

Type: Unit

How Many: 1

Name: 1

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 11S

100,000 Meter Square ID: NU

Grid Coordinates:

Elevation: 0.00 Meters Above Mean Sea Level

Type – the type line has a drop-down menu that gives you 2 choices, “Units” or “Entities”. Selecting one or the other will change the database that is displayed next.

Browse – displays the database selected in the “Type” line.

Recent Selections – displays the most current 15 selections made from each database.

Favorite Selections – gives you the capability to quickly retrieve units you have used in past scenarios.

Required Tab – the information requested on this tab is necessary to place a unit on the map.

Optional Tab – consider the information inputs on this tab to be required. For example, failure to define distance between units, and mount Individual Combatants (IC) will spread your unit out all over the Map.

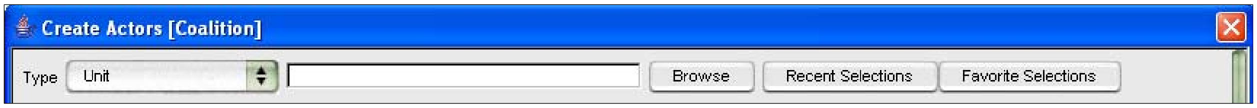
4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

MGRS Lines – you can type in the grid coordinates where you want to place the unit or entity.

- This button is a short cut for placing the unit or entity on the map (point-and-click). LC on the button and LC on the PVD screen at the location you want to place the unit

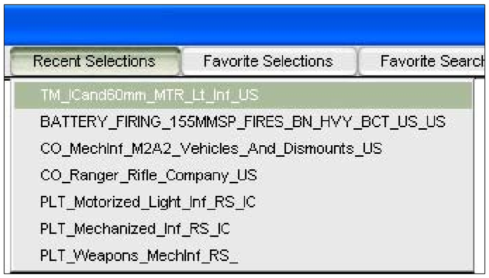
Select a Unit Composition

The sequence of steps to select a unit composition and then place the unit on the map is as follows:


Create Actors [Coalition]
Type
Unit
Browse
Recent Selections
Favorite Selections

- Select "Unit" in the "Type" line.
- LC the "Browse" button to open the unit database or LC the "Recent Selections" button.

If you selected the "Recent Selections" button a list of the last 15 pre-selected units will appear for you to select from.


Recent Selections
Favorite Selections
Favorite Searc

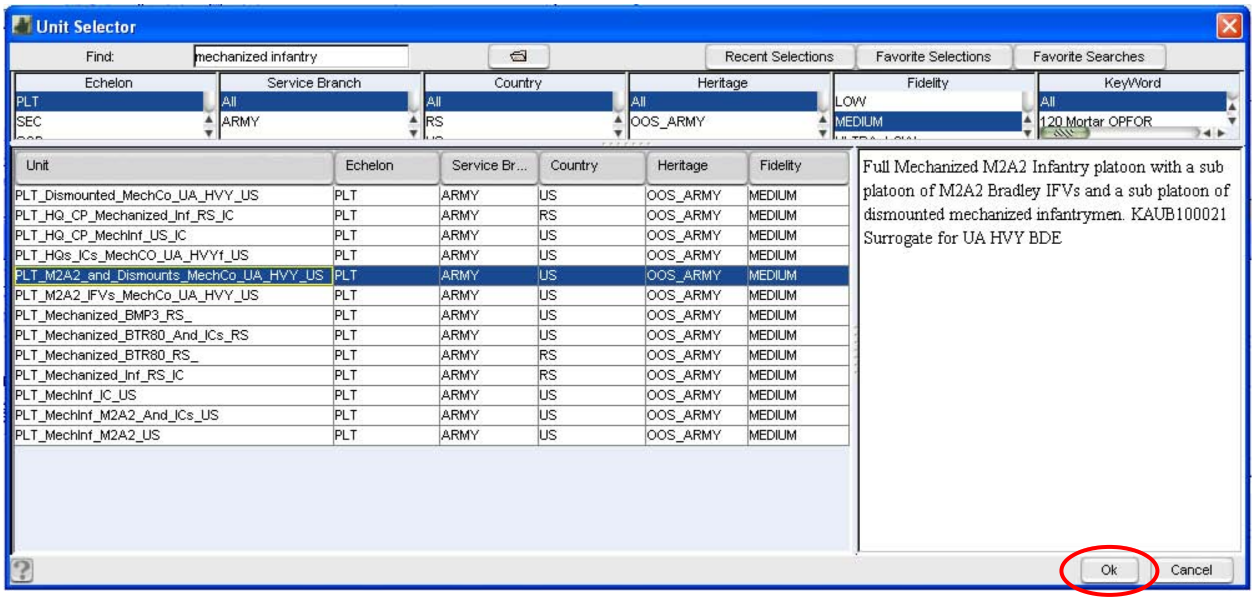
TM_ICand60mm_MTR_Lt_Inf_US
BATTERY_FIRING_155MMSP_FIRES_BN_HVY_BCT_US_US
CO_MechInf_M2A2_Vehicles_And_Dismounts_US
CO_Ranger_Rifle_Company_US
PLT_Motorized_Light_Inf_RS_IC
PLT_Mechanized_Inf_RS_IC
PLT_Weapons_MechInf_RS_

The other 2 buttons "Favorite Selections and Searches" are not available with One SAF v 2.0.

The next section explains the "Browse" feature.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

The “Unit Selector” database opens displaying all of the available units. When selecting a unit at a given echelon the description of the unit on the right hand side of the window will tell you what you are selecting. In the example below, a Bradley equipped Platoon has been selected (highlighted). It is described on the right hand side of the display as a “Full mechanized M2A2 Infantry platoon with a sub platoon of Bradley Fighting Vehicles and dismounted mechanized infantrymen”.



Find: mechanized infantry

Unit	Echelon	Service Br...	Country	Heritage	Fidelity
PLT_Dismounted_MechCo_UA_HVY_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_HQ_CP_Mechanized_Inf_RS_IC	PLT	ARMY	RS	OOS_ARMY	MEDIUM
PLT_HQ_CP_MechInf_US_IC	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_HQs_ICs_MechCO_UA_HVYf_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_M2A2_and_Dismounts_MechCo_UA_HVY_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_M2A2_IFVs_MechCo_UA_HVY_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_Mechanized_BMP3_RS_	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_Mechanized_BTR80_And_ICs_RS	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_Mechanized_BTR80_RS_	PLT	ARMY	RS	OOS_ARMY	MEDIUM
PLT_Mechanized_Inf_RS_IC	PLT	ARMY	RS	OOS_ARMY	MEDIUM
PLT_MechInf_IC_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_MechInf_M2A2_And_ICs_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_MechInf_M2A2_US	PLT	ARMY	US	OOS_ARMY	MEDIUM

Full Mechanized M2A2 Infantry platoon with a sub platoon of M2A2 Bradley IFVs and a sub platoon of dismounted mechanized infantrymen. KAUB100021 Surrogate for UA HVY BDE

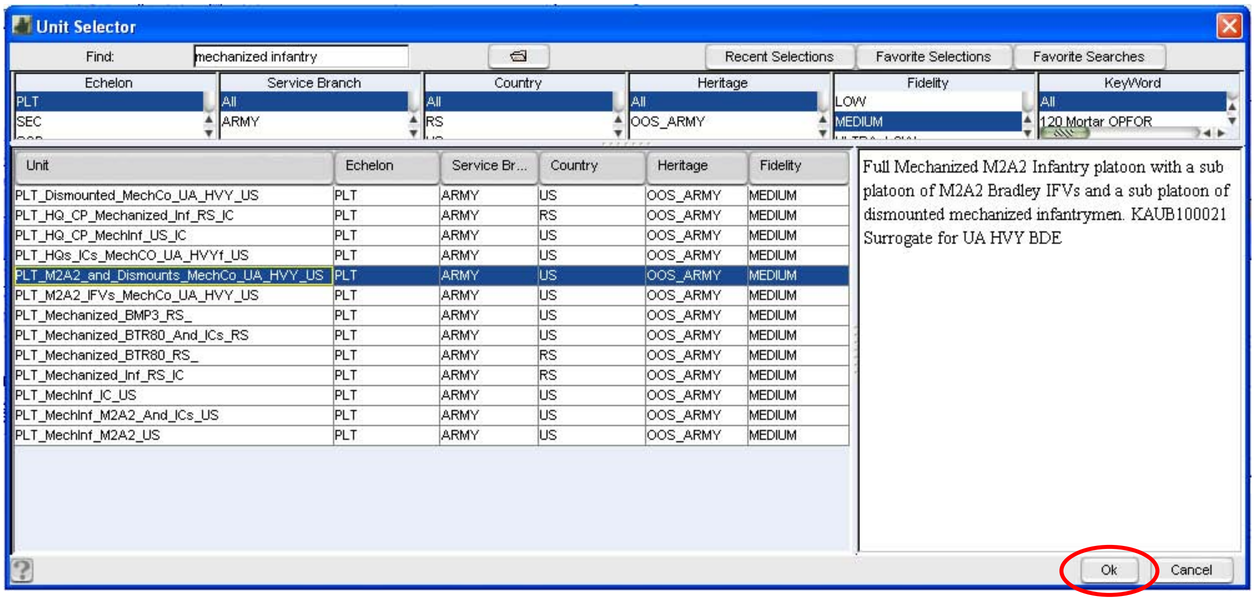
The window has a series of filters you can apply to reduce the number of units displayed. The first filter is the “Find” line located in the upper left corner of the window. Here you can type in a description of the unit you are looking for, e.g. mechanized infantry, and then press the “enter” key on your key board. You can then apply the filters located across the top of the screen

- Echelon – size of unit (team, squad, section, platoon, company, battalion, brigade, etc.)
- Service Branch – All and Army are the only options
- Country – All, US, and RS are the options (RS equates to Soviet forces)
- Heritage – All and OOS_Army
- Fidelity – All, High, Medium, Low and Ultra_Low (each level equates to the units ability to perform tasks/behaviors). The higher the fidelity the better the unit; however, the higher the fidelity the more systems capabilities are used. It is recommended that you use the medium fidelity.
- Keyword – a list of all the keywords used when developing the entities/units. Highlight a key word and the window automatically applies the filters.

When searching for units or equipment you can type partial words into the “Find” window. For example, if you are looking for a group of people to replicate civilians-on-the-battlefield type “civil” into the “Find” window. The results will list all units that have the word civil in them. The same process applies for finding terrorist. Type “terror” into the “Find” window and the system will display all terrorist, assassins, kidnappers, etc.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

Some units will include all MTO&E equipment and personnel, while others might only include the equipment and no personnel. The Bradley example is repeated below to illustrate this point. The description lists the selection as a full mechanized M2A2 Infantry platoon with a sub platoon of Bradley Fighting Vehicles and dismounted mechanized infantrymen. This description equates to an MTO&E platoon of 4 vehicles plus crews and 3 9-man squads as outlined in FM 3-21.71 (Aug 2002). However, this does not mean that the squads are loaded in the correct vehicles; checking passenger manifest is an important step that will alleviate frustrations as you develop your scenario. The steps to check the manifest are described in more detail in this chapter. It is important to highlight the appropriate unit to get the equipment and personnel required. In the screen shot below if you had high-lighted the unit directly below the selected BFV PLT you would have selected only the vehicle sections without dismounted infantry.



Find: mechanized infantry

Unit	Echelon	Service Br...	Country	Heritage	Fidelity
PLT_Dismounted_MechCo_UA_HVY_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_HQ_CP_Mechanized_Inf_RS_IC	PLT	ARMY	RS	OOS_ARMY	MEDIUM
PLT_HQ_CP_MechInf_US_IC	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_HQs_ICs_MechCO_UA_HVYf_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_M2A2_and_Dismounts_MechCo_UA_HVY_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_M2A2_IFVs_MechCo_UA_HVY_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_Mechanized_BMP3_RS_	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_Mechanized_BTR80_And_ICs_RS	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_Mechanized_BTR80_RS_	PLT	ARMY	RS	OOS_ARMY	MEDIUM
PLT_Mechanized_Inf_RS_IC	PLT	ARMY	RS	OOS_ARMY	MEDIUM
PLT_MechInf_IC_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_MechInf_M2A2_And_ICs_US	PLT	ARMY	US	OOS_ARMY	MEDIUM
PLT_MechInf_M2A2_US	PLT	ARMY	US	OOS_ARMY	MEDIUM

Full Mechanized M2A2 Infantry platoon with a sub platoon of M2A2 Bradley IFVs and a sub platoon of dismounted mechanized infantrymen. KAUB100021 Surrogate for UA HVY BDE

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

When you have found the unit you want to use,

- LC on the unit to highlight.

A description of that unit appears in the window to the right of the list. If this is the unit you want,

- LC the "Ok" button in the lower right corner of the window.

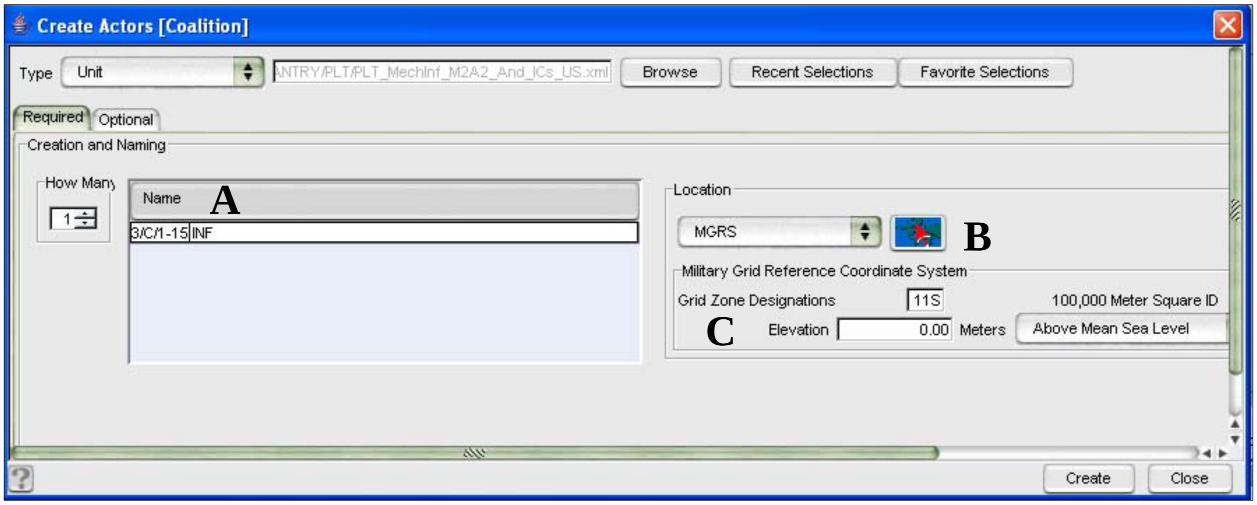
The system returns to the "Create Actors" window where you must now

- Name the unit (**A**).
    - The example below is 3rd Platoon, Charlie Company, 1st Battalion 15th Infantry (3/C/1-15 INF). If you don't insert a name, the default number "1" will be the uni's name.
- Place the unit at a specific location on the map (**B**) and (**C**):

If you followed the directions stated earlier in the guide and centered your map on the desired location when selecting the terrain database, then you can use the map short cut tool to place your units on the map.

- Using the Map short cut tool (point-and-click) (**B**).
    - LC on the Red Arrow
    - LC on the map to activate
    - LC a second time on the map to populate the grid coordinates
    - The grid coordinate boxes will update with the selected location
- Typing in the grid coordinates (**C**).
    - Type in the grid zone designation
    - Type in the 100,000 grid square identifier
    - Type in the grid coordinate

"Required Tab" screen capture


Create Actors [Coalition]
Browse
Recent Selections
Favorite Selections
Required
Optional
Creation and Naming
How Many
Name
A
Location
B
Military Grid Reference Coordinate System
100,000 Meter Square ID
C
Above Mean Sea Level
Create
Close

Type: Unit ANTRY/PLT/PLT_MechInf_M2A2_And_ICs_US.xml

How Many: 1

Name: 3/C/1-15 INF

Location: MGRS

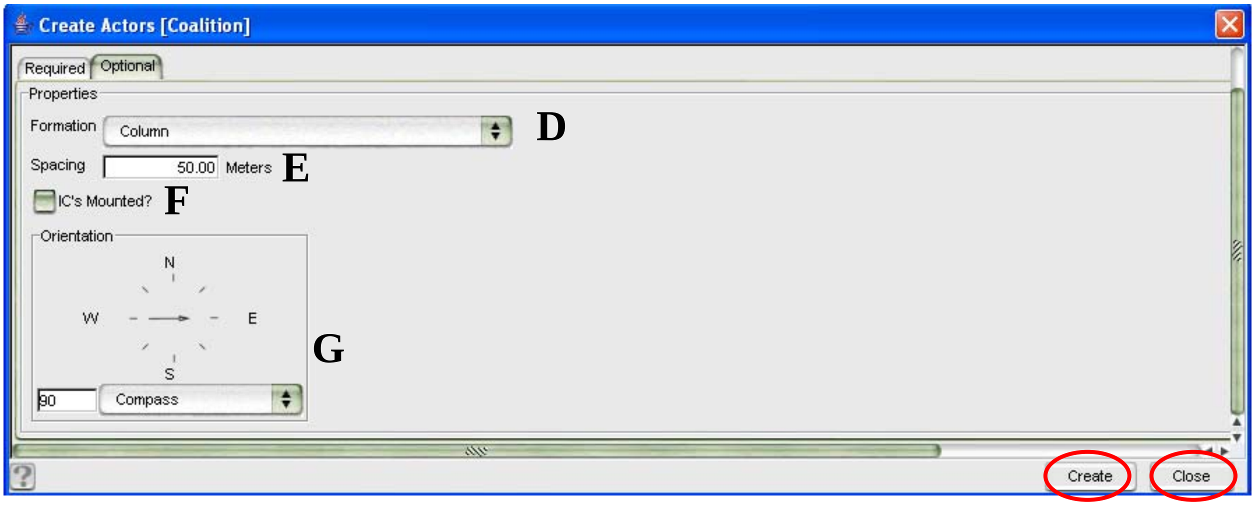
Grid Zone Designations: 11S

Elevation: 0.00 Meters

When placing IC's on the map you should first zoom into a level that allows you to see clearly inside a building, or on the specific side of a road or road junction.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

“Optional Tab” screen shot (It is HIGHLY recommended that the inputs to this screen are completed)


Create Actors [Coalition]

Properties

Formation: Column

Spacing: 50.00 Meters

☐ IC's Mounted?

Orientation: 90 Compass

- Put it in a formation (D)
- Set the distance between subordinate units (E)
- Mount Individual Combatants (IC’s) (F)
    - IC’s are the Soldiers (primarily Infantry) that ride in the back of the vehicles. If you do not select “IC’s Mounted” here your Soldiers will be outside of the vehicles and require you to add another step to the mission editor to remount the Soldiers.
- Set the orientation for the unit (G)

- The last step is to LC the “Create” button on the lower right corner of the window. The “Create” button will turn from dark grey to light grey when the unit has been created on the map.

- LC the “Close” button.

The length of time to process and place the unit on the screen differs with the amount of entities and the fidelity of the unit. Once the software has processed the request the Task Organization and PVD windows will populate with the appropriate units.

What Ifs!!

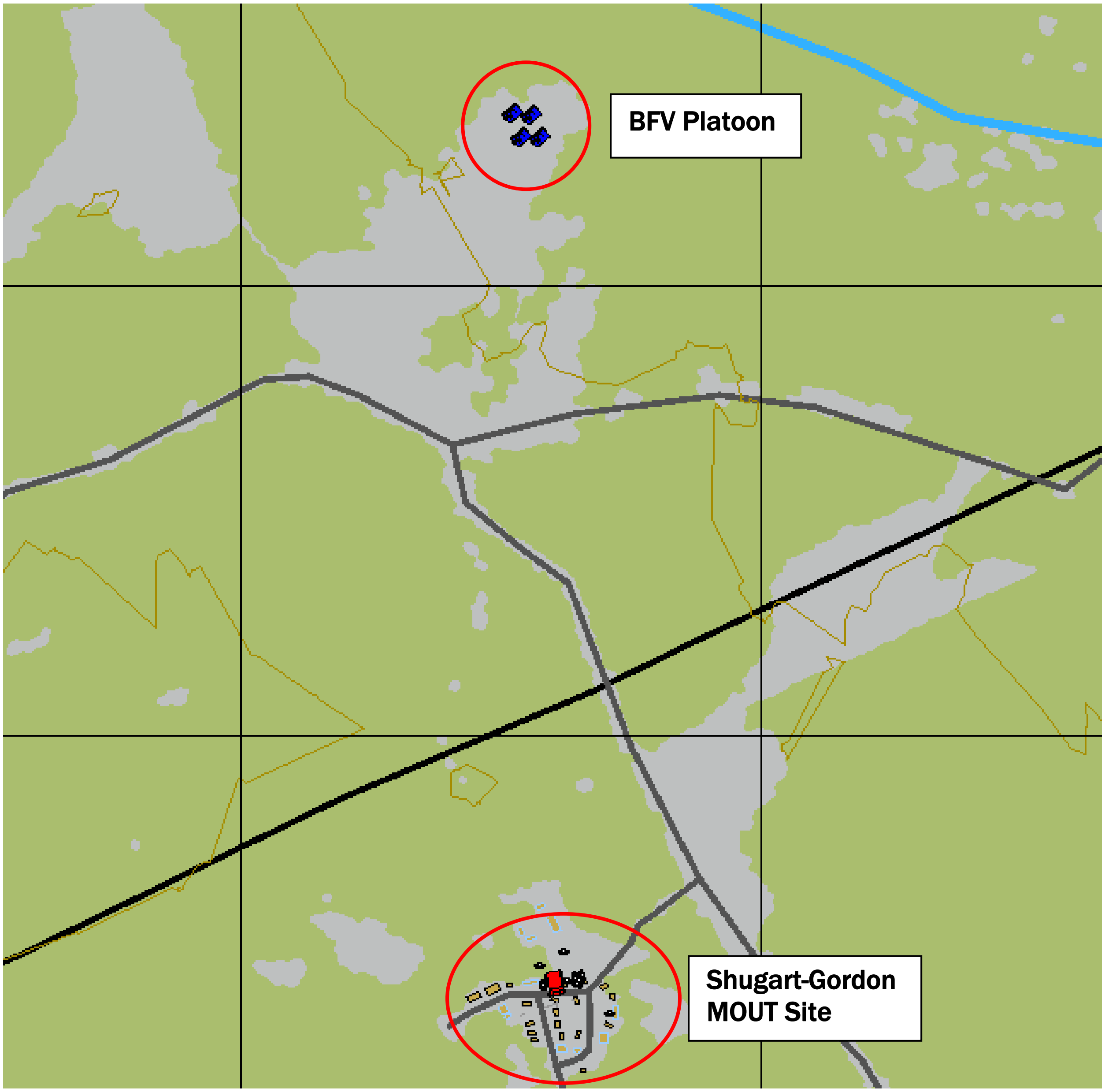
If you forget to select the optional inputs (or the name in the required parameters) before you create the entity or unit you still have the ability to modify certain parameters using the Status window.

You can:
    Rename the entity or Unit
    Change the location
    Change the orientation
    Change the formation
    Change the entity/unit spacing
You cannot:
    Mount ICs (use the behavior mount/dismount or magic mount/dismount in the Mission Editor)

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

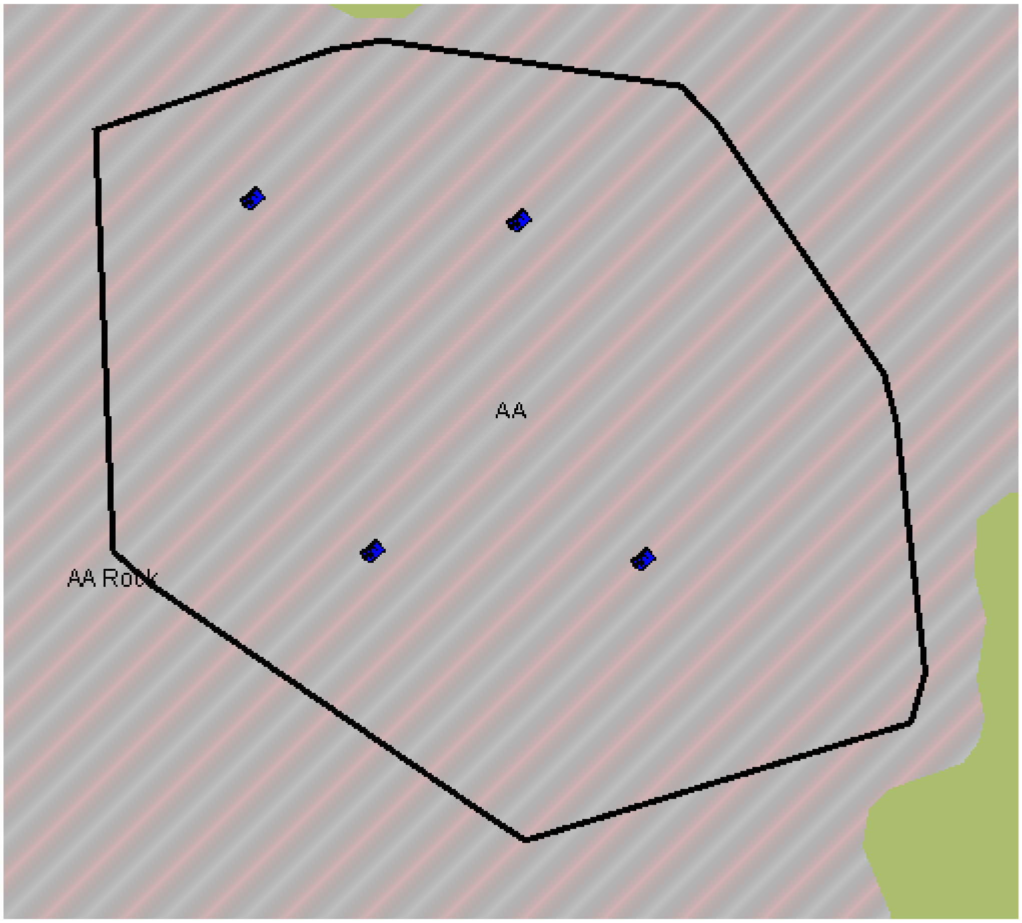
The system populated the PVD screen with the BFV Platoon.

This screen capture displays the location of the platoon in relation to the Shugart-Gordon MOUT village. The screen capture on the next page is a picture of the same platoon but at a smaller scale.


BFV Platoon
Shugart-Gordon MOUT Site

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

This screen capture shows the view of the platoon of M2A2 Bradley's with the Dismounted Infantry inside the vehicles at a scale of 1:1000.

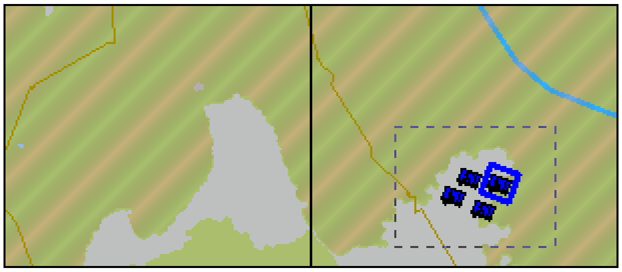


Moving/Refining the Location of the Units/Entities

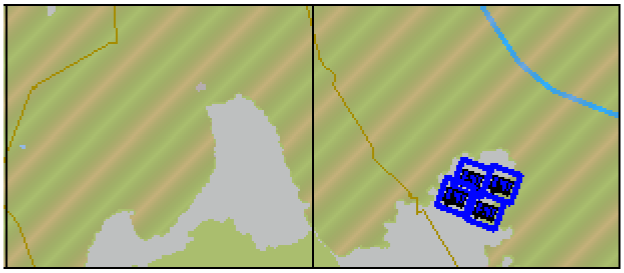
Once you have placed the units/entities on the map you have the option of moving them or refining their location by highlighting them and dragging and dropping to a new location. This capability is especially helpful when placing the initial array of forces on the map. You can place a company in one location and then pull platoons and place them in different locations; or you can place individual combatants near a building and then refine their location based on line of sight and area of sight.

To move a unit:

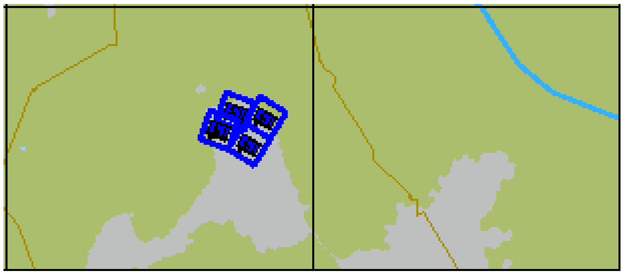
- Draw a box around the unit by LC, **HOLD**, and dragging from upper left to lower right, release.



- This will highlight all of the vehicles inside the box.



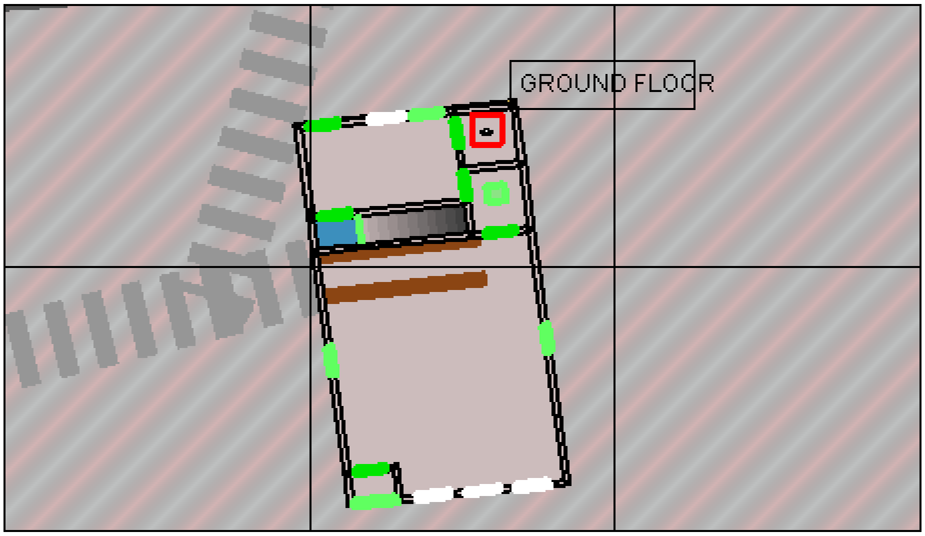
- Press and **HOLD** the shift key
- LC and **HOLD** on any one of the 4 vehicles
- Drag the group to the new location and release the LC



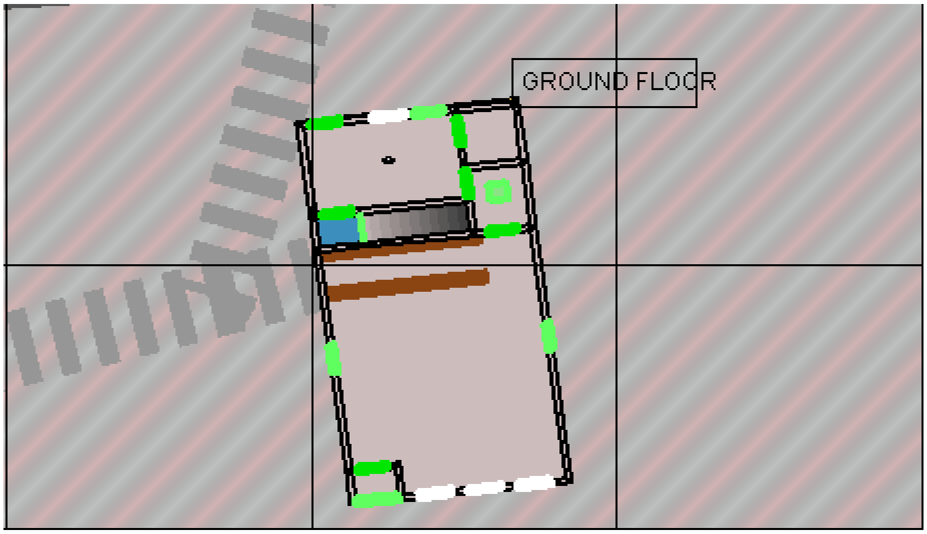
4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

To move an Entity:

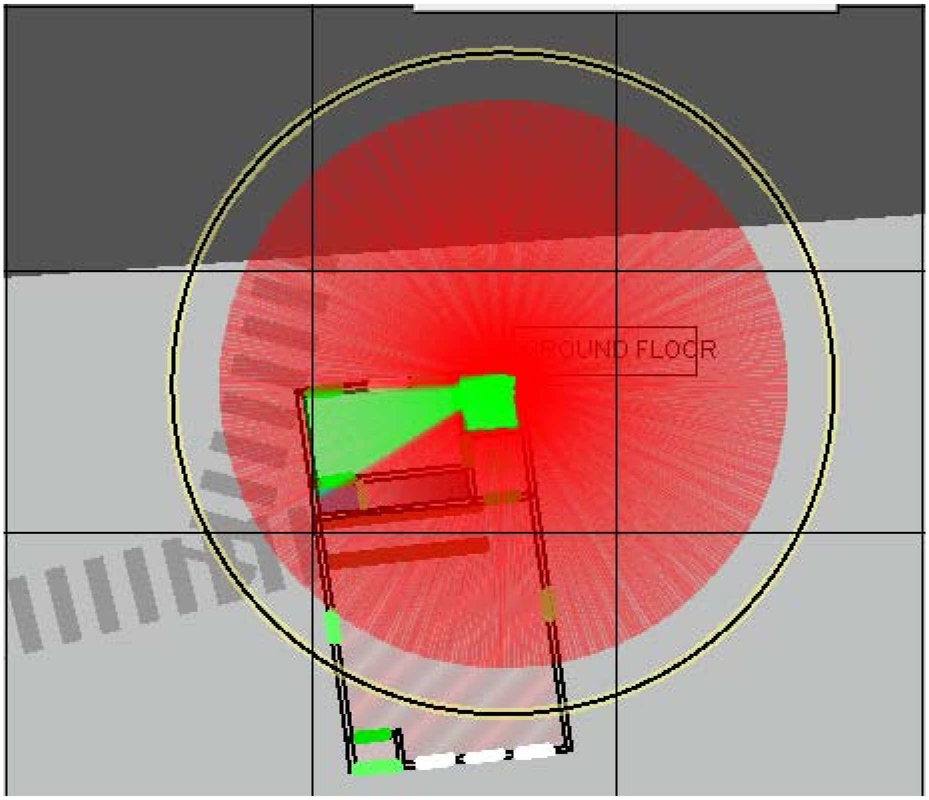
- LC on the entity to highlight. The entity will be highlighted with a box. The color of the box relates to the side relationship (blue – friendly, red – hostile, green – neutral, yellow - unknown).



- Press and **HOLD** the shift key
- LC and **HOLD** on the Entity
- Drag to the new location and release the LC

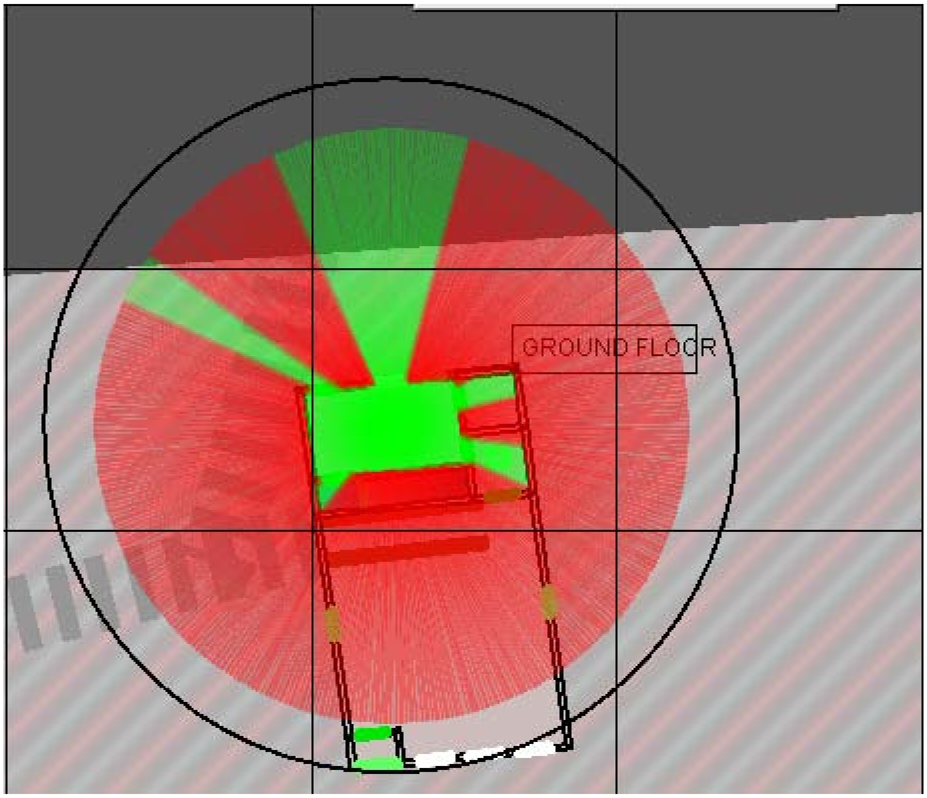


Moving the entities around in the building will change their line and area-of-sight and change their reactions based on what they can see. The screen captures below show you the difference in area of sight by each location.



The area-of-sight based on initial location in the corner room of the building.

The green depicts an unobstructed view, while the red depicts an obstructed view.



The new area-of-sight based on the relocation of the IC to the center of the next room.

The unobstructed view now encompasses what is outside the building when viewed through the window and door.

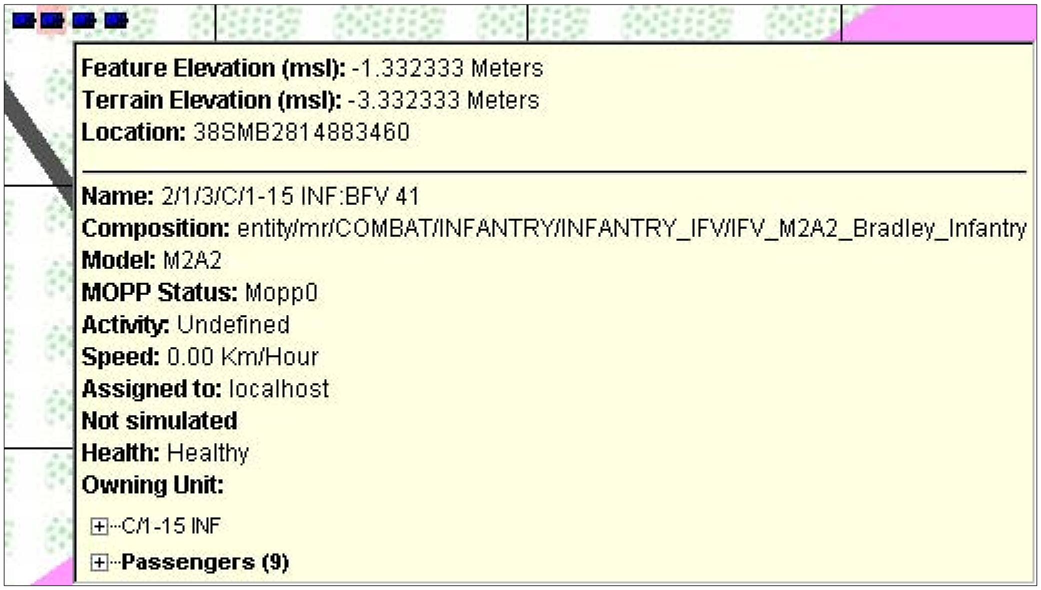
Verifying Passenger Location

Once the unit has populated the PVD screen it is imperative to check that your passengers are in the back of the appropriate vehicles.

There are 2 methods to find out which passengers are in each vehicle.

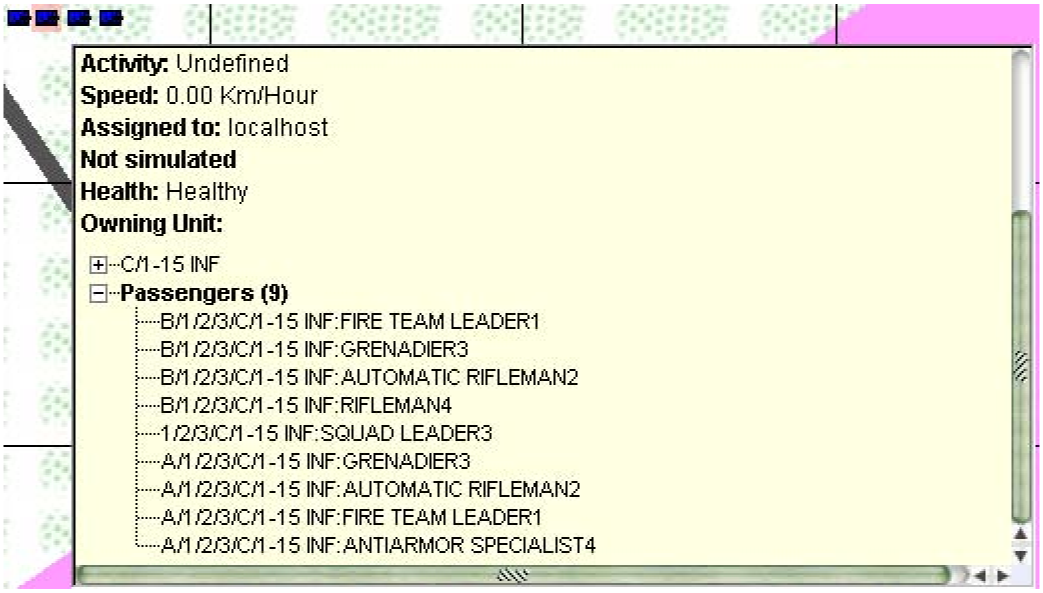
The first method requires you to move the cursor to a vehicle and mouse over the vehicle until a pop-up window appears.

Quickly move the cursor to the pop-up window and keep it inside to avoid have the window disappear. Move to the bottom of the window and **LC** on the plus sign next to the word Passengers.



Feature Elevation (msl): -1.332333 Meters
Terrain Elevation (msl): -3.332333 Meters
Location: 38SMB2814883460

Name: 2/1/3/C/1-15 INF:BFV 41
Composition: entity/mr/COMBAT/INFANTRY/INFANTRY_IFV/IFV_M2A2_Bradley_Infantry
Model: M2A2
MOPP Status: Mopp0
Activity: Undefined
Speed: 0.00 Km/Hour
Assigned to: localhost
Not simulated
Health: Healthy
Owning Unit:
⊞ C/1-15 INF
⊞ **Passengers (9)**



Activity: Undefined
Speed: 0.00 Km/Hour
Assigned to: localhost
Not simulated
Health: Healthy
Owning Unit:
⊞ C/1-15 INF
⊟ **Passengers (9)**
- B/1/2/3/C/1-15 INF:FIRE TEAM LEADER1
- B/1/2/3/C/1-15 INF:GRENADIER3
- B/1/2/3/C/1-15 INF:AUTOMATIC RIFLEMAN2
- B/1/2/3/C/1-15 INF:RIFLEMAN4
- 1/2/3/C/1-15 INF:SQUAD LEADER3
- A/1/2/3/C/1-15 INF:GRENADIER3
- A/1/2/3/C/1-15 INF:AUTOMATIC RIFLEMAN2
- A/1/2/3/C/1-15 INF:FIRE TEAM LEADER1
- A/1/2/3/C/1-15 INF:ANTIARMOR SPECIALIST4

The window will display a list of passengers who are inside the vehicle.

If there was nobody riding in the vehicle, then there would be nothing listed under the owning unit.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

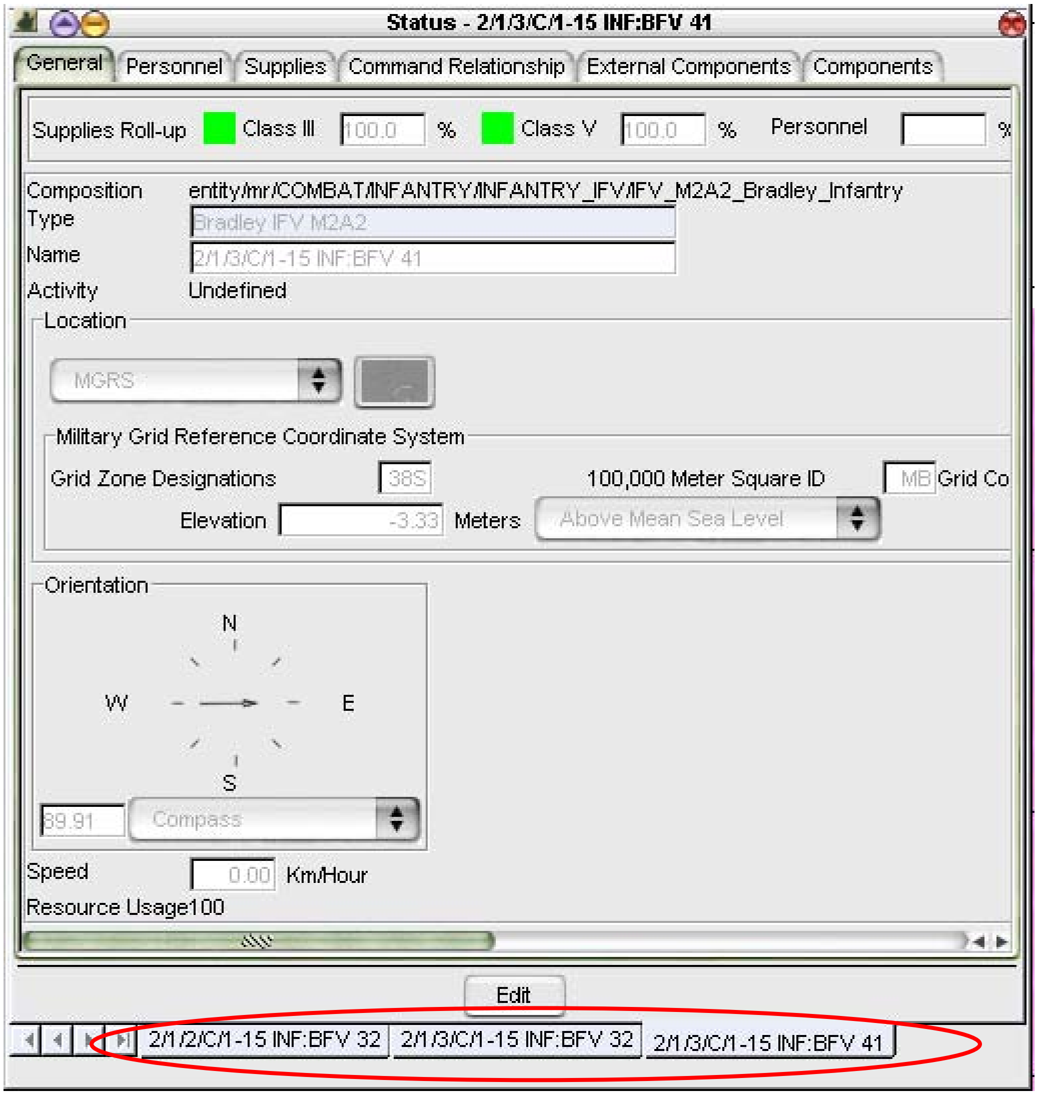
The second method of determining who is inside each vehicle is by using the Status window. To populate the Status window with the data from the vehicle either,

- Double LC on the vehicle of interest on the PVD screen.

or

- Highlight the vehicle in the Task Organization or Mission Editor window by LC'ing
- RC on the vehicle name
- mouse over and LC "properties" in the pop-up window

The Status window will now be populated with the information for that vehicle. You can Double LC on 2 additional vehicles which will add additional tabs for those vehicles at the bottom of the Status window.



General
Personnel
Supplies
Command Relationship
External Components
Components
Location
Military Grid Reference Coordinate System
Orientation
N
W
E
S
Edit
2/1/2/C/1-15 INF:BFV 32
2/1/3/C/1-15 INF:BFV 32
2/1/3/C/1-15 INF:BFV 41

Status - 2/1/3/C/1-15 INF:BFV 41

Supplies Roll-up 🟩 Class III 100.0 % 🟩 Class V 100.0 % Personnel %

Composition entity/mr/COMBAT/INFANTRY/INFANTRY_IFV/IFV_M2A2_Bradley_Infantry
Type Bradley IFV M2A2
Name 2/1/3/C/1-15 INF:BFV 41
Activity Undefined

MGRS

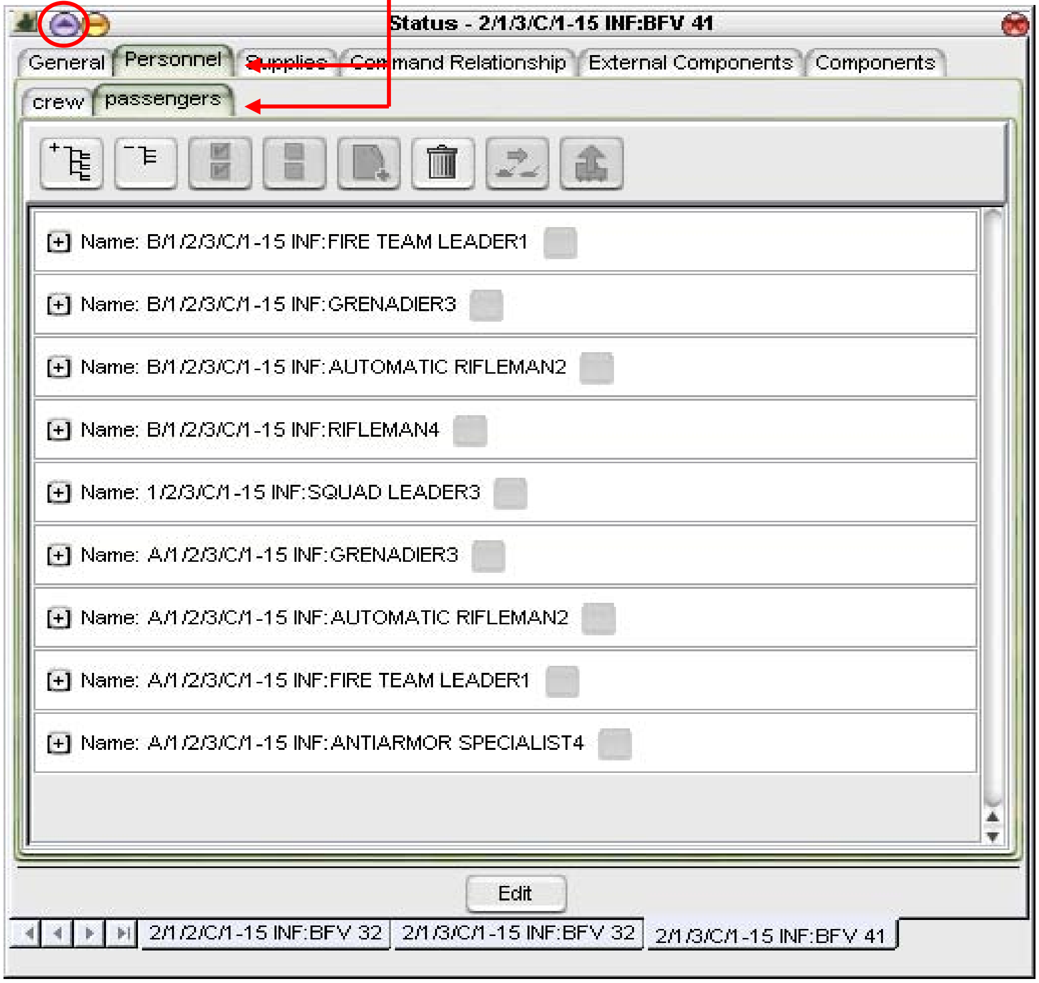
Grid Zone Designations 38S
100,000 Meter Square ID MB
Grid Co
Elevation -3.33 Meters
Above Mean Sea Level

89.91 Compass

Speed 0.00 Km/Hour
Resource Usage100

The Status window will only display 3 tabs at a time, any additional vehicles added will overwrite the tabs and the window will display only the most current selected. The tabs in this screen shot represent 3 of the 14 different vehicles from C/1-15 INF. By clicking on each tab, the vehicles status is displayed.

Maximize the Status window by LC'ing the up arrow located in the upper left corner of the Status window. Select the "Personnel" tab and select the "Passengers" tab to display the Soldiers within the vehicle.


Status - 2/1/3/C/1-15 INF:BFV 41
General
Personnel
Supplies
Command Relationship
External Components
Components
crew
passengers
Edit
2/1/2/C/1-15 INF:BFV 32
2/1/3/C/1-15 INF:BFV 32
2/1/3/C/1-15 INF:BFV 41

[+] Name: B/1/2/3/C/1-15 INF:FIRE TEAM LEADER1
[+] Name: B/1/2/3/C/1-15 INF:GRENADIER3
[+] Name: B/1/2/3/C/1-15 INF:AUTOMATIC RIFLEMAN2
[+] Name: B/1/2/3/C/1-15 INF:RIFLEMAN4
[+] Name: 1/2/3/C/1-15 INF:SQUAD LEADER3
[+] Name: A/1/2/3/C/1-15 INF:GRENADIER3
[+] Name: A/1/2/3/C/1-15 INF:AUTOMATIC RIFLEMAN2
[+] Name: A/1/2/3/C/1-15 INF:FIRE TEAM LEADER1
[+] Name: A/1/2/3/C/1-15 INF:ANTIARMOR SPECIALIST4

Check the vehicles for Soldiers before you assign an Infantry Squad to Assault a Building and they are not in the vehicle you assumed would take them there.

These passengers are Alpha and Bravo teams of 1st Squad, 3rd Platoon, Charlie Company, 1st Battalion 15th Infantry.

More information on how to move passengers from one vehicle to another can be found in Appendix A

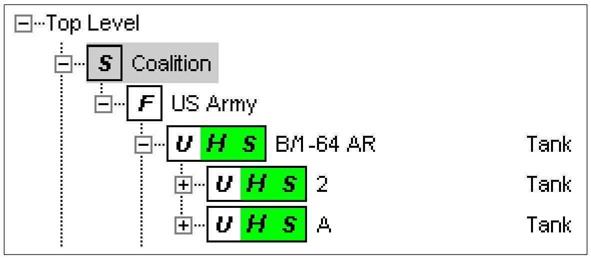
4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

Naming Conventions

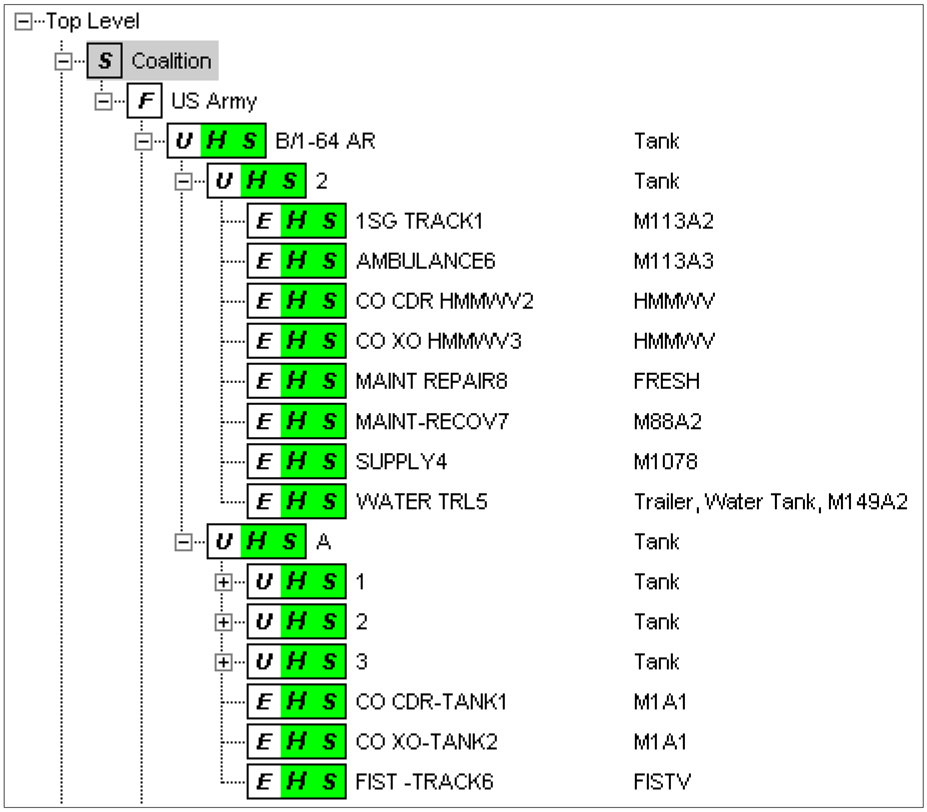
When creating actors (entities/units) using the “Create Actors” window you have the opportunity to name the element you just selected. If you selected and named an entity, then the OneSAF naming conventions for subordinates do not apply (1 person/thing = 1 name). However, if you select a unit that has a list of subordinate elements, then the OneSAF naming conventions for subordinates applies. Understanding OneSAFs naming conventions will help you in assigning the behavior to the right unit or subordinate.

To illustrate this point we focus on the Armor Company and the Mechanized Infantry Company available in the “Unit Selector” database.

The first screen capture depicts 1 (one) Armor Company. It was user named B/1-64 AR when it was selected using the “Create Actor” window. The OneSAF Armor Company has 2 subordinate elements assigned, they are “2” and “A”. These designations are assigned by OneSAF. When you drill down you find that “2” is actually the Company Headquarters Platoon and “A” is the location of the 3 tank platoons, the Commander, the XO, and the FISTV. The entity/unit designation are again assigned by OneSAF.



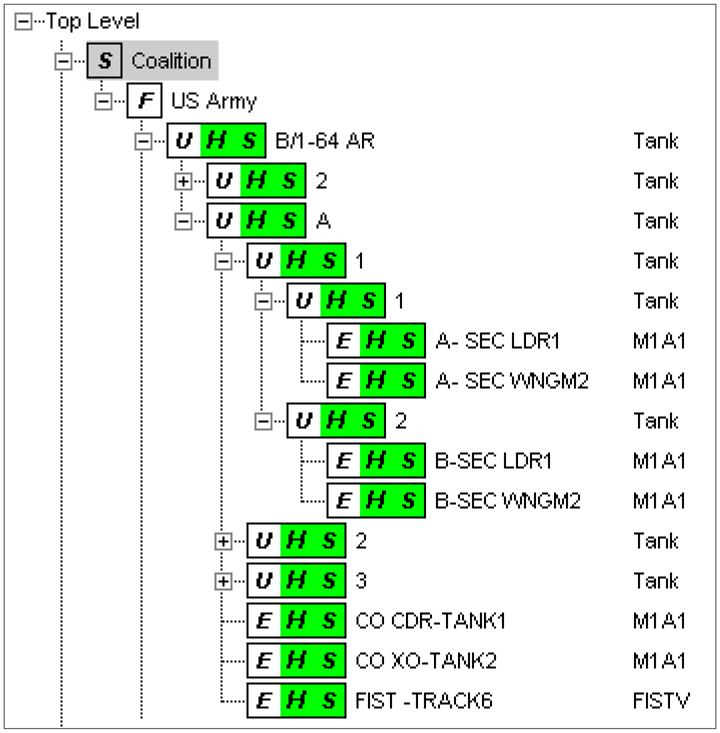
⊟	Top Level	
⊟ S	Coalition	
⊟ F	US Army	
⊟ U H S	B/1-64 AR	Tank
⊞ U H S	2	Tank
⊞ U H S	A	Tank



⊟	Top Level	
⊟ S	Coalition	
⊟ F	US Army	
⊟ U H S	B/1-64 AR	Tank
⊟ U H S	2	Tank
E H S	1SG TRACK1	M113A2
E H S	AMBULANCE6	M113A3
E H S	CO CDR HMMWV2	HMMWV
E H S	CO XO HMMWV3	HMMWV
E H S	MAINT REPAIR8	FRESH
E H S	MAINT-RECOV7	M88A2
E H S	SUPPLY4	M1078
E H S	WATER TRL5	Trailer, Water Tank, M149A2
⊟ U H S	A	Tank
⊞ U H S	1	Tank
⊞ U H S	2	Tank
⊞ U H S	3	Tank
E H S	CO CDR-TANK1	M1A1
E H S	CO XO-TANK2	M1A1
E H S	FIST -TRACK6	FISTV

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

Within each Tank Platoon are the "Alpha" and "Bravo" sections of 2 tanks each.

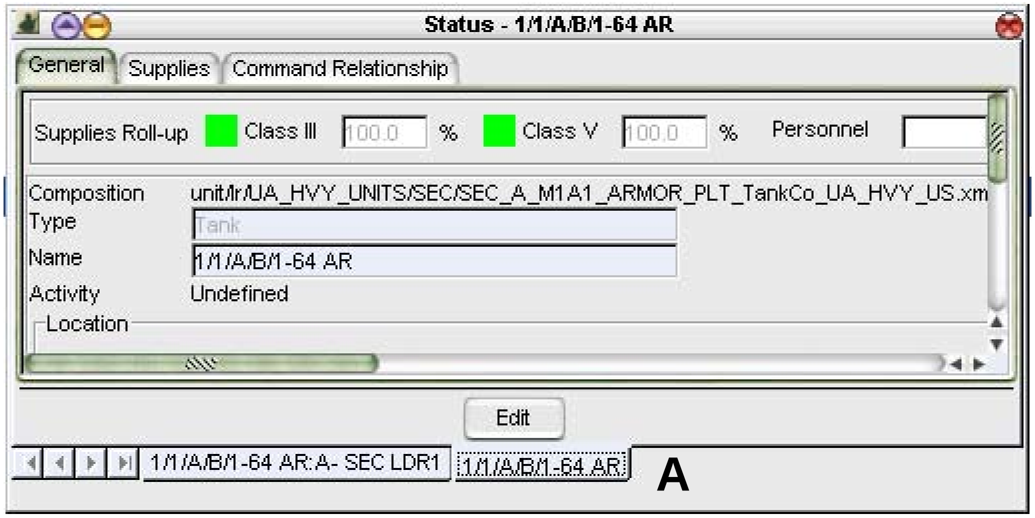


⊟	Top Level	
⊟ S	Coalition	
⊟ F	US Army	
⊟ U H S	B/1-64 AR	Tank
⊞ U H S	2	Tank
⊟ U H S	A	Tank
⊟ U H S	1	Tank
⊟ U H S	1	Tank
E H S	A- SEC LDR1	M1A1
E H S	A- SEC WNGM2	M1A1
⊟ U H S	2	Tank
E H S	B-SEC LDR1	M1A1
E H S	B-SEC WNGM2	M1A1
⊞ U H S	2	Tank
⊞ U H S	3	Tank
E H S	CO CDR-TANK1	M1A1
E H S	CO XO-TANK2	M1A1
E H S	FIST -TRACK6	FISTV

This screen capture depicts, in detail, one of the 3 tank platoons in B/1-64 AR. When you drill down on the 1st Platoon you unveil A and B sections with two tanks in each section, the Section Leader and the Wingman. The description of the entity is located in the far right column. In the Task Organization full screen this column is title "Type".

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

When displayed as a vehicle section on the Status window the OneSAF naming convention reads 1/1/A/B/1-64 AR (A). The doctrinally correct naming would be A/1/B/1-64 AR. When attempting to rename the vehicle section correctly the OneSAF software will still give it an additional numeric designator of 1 – as in 1/ A/1/B/1-64 AR (B).



Status - 1/1/A/B/1-64 AR

Supplies Roll-up 🟩 Class III 100.0 % 🟩 Class V 100.0 % Personnel

Composition unit/lr/UA_HVY_UNITS/SEC/SEC_A_M1A1_ARMOR_PLT_TankCo_UA_HVY_US.xm

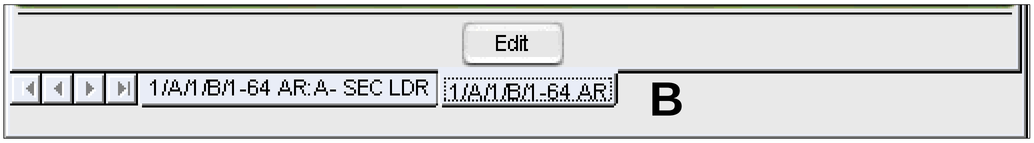
Type Tank

Name 1/1/A/B/1-64 AR

Activity Undefined

Location

1/1/A/B/1-64 AR:A- SEC LDR1 | 1/1/A/B/1-64 AR

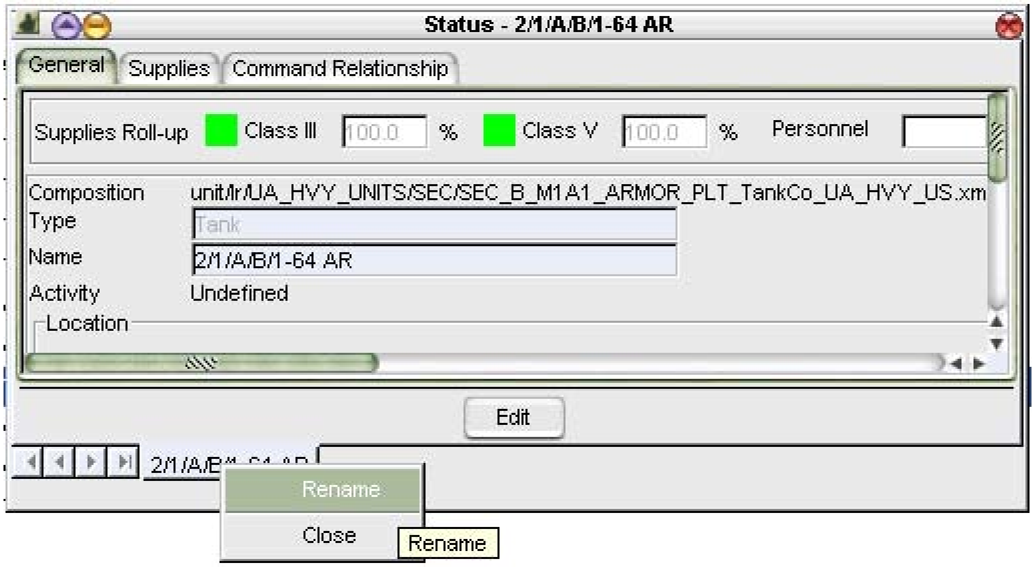


1/A/1/B/1-64 AR:A- SEC LDR | 1/A/1/B/1-64 AR

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

Renaming Entities/Units

To rename the vehicle section; in this case we are renaming the Bravo Section:



Status - 2/1/A/B/1-64 AR

Supplies Roll-up Class III 100.0 % Class V 100.0 % Personnel

Composition unit/lr/UA_HVY_UNITS/SEC/SEC_B_M1A1_ARMOR_PLT_TankCo_UA_HVY_US.xm

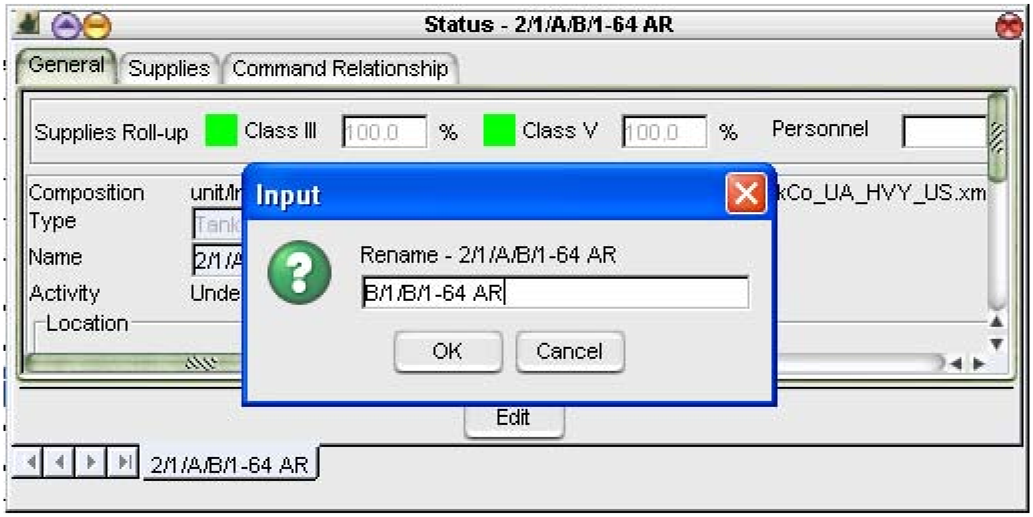
Type Tank

Name 2/1/A/B/1-64 AR

Activity Undefined

General
Supplies
Command Relationship
Location
Edit
2/1/A/B/1-64 AR
Rename
Close
Rename

- RC on the tab
- Mouse over “Rename” on the pop-up window and LC
- Type in the new designation in the “Input” pop-up window (B/1/B/1-64 AR)



Status - 2/1/A/B/1-64 AR

Input

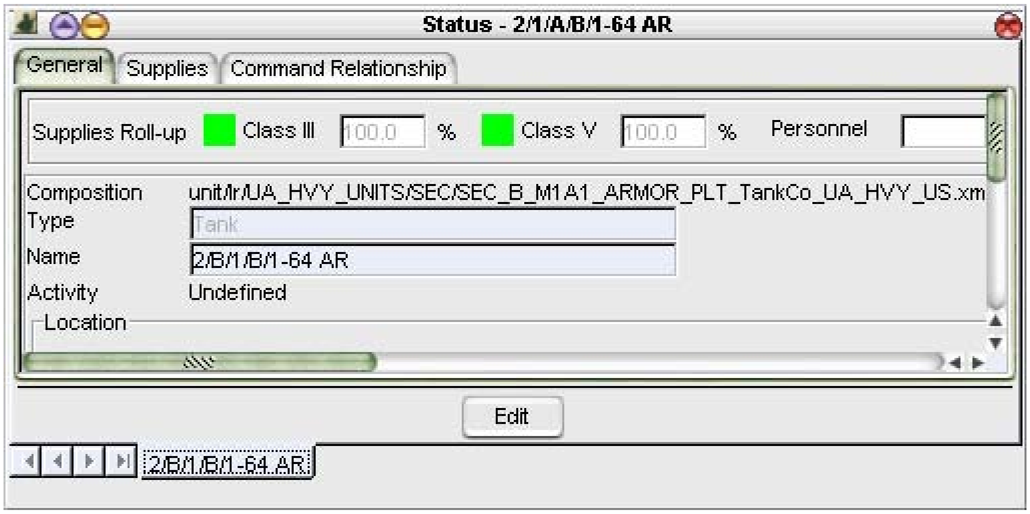
Rename - 2/1/A/B/1-64 AR

B/1/B/1-64 AR

General
Supplies
Command Relationship
Supplies Roll-up
Class III
Class V
Personnel
Composition
Type
Name
Activity
Location
OK
Cancel
Edit
2/1/A/B/1-64 AR

- LC on “OK”

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization



Status - 2/1/A/B/1-64 AR

Supplies Roll-up 🟩 Class III 100.0 % 🟩 Class V 100.0 % Personnel

Composition unit/lr/UA_HVY_UNITS/SEC/SEC_B_M1A1_ARMOR_PLT_TankCo_UA_HVY_US.xm

Type Tank

Name 2/B/1/B/1-64 AR

Activity Undefined

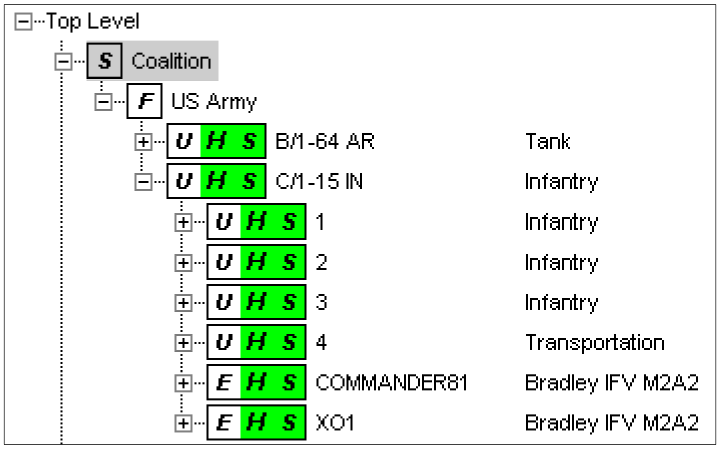
Location

2/B/1/B/1-64 AR

The designation changes on the Status window tab; however, you can see that the system has assigned an additional number (2) to the doctrinally correct unit designation. This current version of OneSAF does not allow you to change that.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

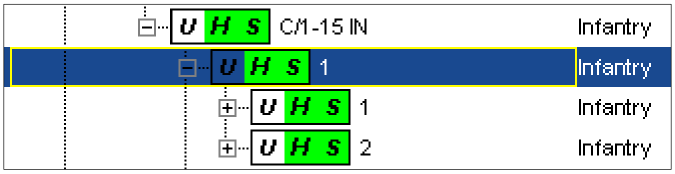
The Mechanized Infantry Company naming conventions pose similar challenges. However, this time it concerns differentiating between the vehicle sections and the rifle squads.



```
⊟ Top Level
  ⊟ S Coalition
    ⊟ F US Army
      ⊞ U H S B/1-64 AR        Tank
      ⊟ U H S C/1-15 IN        Infantry
        ⊞ U H S 1              Infantry
        ⊞ U H S 2              Infantry
        ⊞ U H S 3              Infantry
        ⊞ U H S 4              Transportation
        ⊞ E H S COMMANDER81    Bradley IFV M2A2
        ⊞ E H S XO1            Bradley IFV M2A2
```

An example of an OneSAF standard BFV equipped company is depicted in the screen capture to the left. The unit designator of C/1-15 IN was applied by the user. The subordinate unit designators were applied by OneSAF. 1, 2, and 3 are the 3 maneuver platoons that contain the Bradley vehicles and rifle squads. 4 is the designation for the Headquarters platoon that contains the 1SG and associated wheeled vehicles. The Commander and XO are depicted as entities.

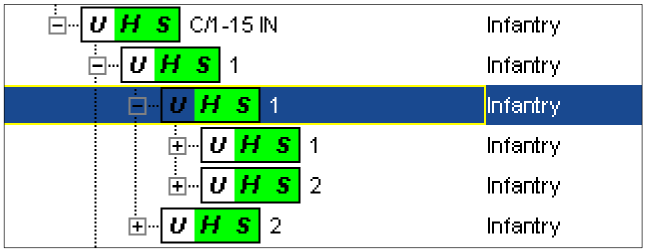
Each maneuver platoon has 2 subordinates: vehicles and squads. OneSAF programmers have assigned a "1" to the vehicle sections and a "2" to the rifle squads to give each unit a unique designator; however, this additional number does not match the doctrinally correct names and can cause confusion when assigning behaviors.



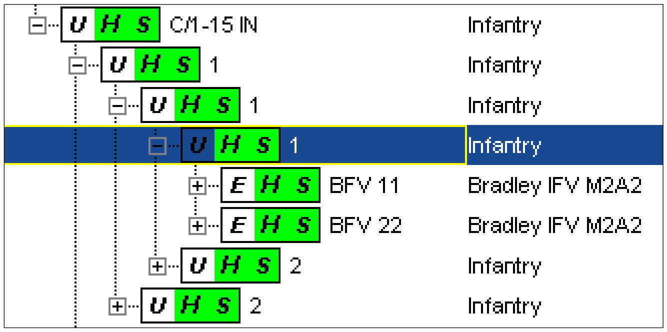
```
⊟ U H S C/1-15 IN    Infantry
  ⊟ U H S 1          Infantry
    ⊞ U H S 1        Infantry
    ⊞ U H S 2        Infantry
```

1st Platoon has subordinate 1 and 2. Subordinate 1 holds the vehicle sections.

The vehicle sections are also designated 1 and 2 instead of Alpha and Bravo.



```
⊟ U H S C/1-15 IN      Infantry
  ⊟ U H S 1            Infantry
    ⊟ U H S 1          Infantry
      ⊞ U H S 1        Infantry
      ⊞ U H S 2        Infantry
    ⊞ U H S 2          Infantry
```



```
⊟ U H S C/1-15 IN          Infantry
  ⊟ U H S 1                Infantry
    ⊟ U H S 1              Infantry
      ⊟ U H S 1            Infantry
        ⊞ E H S BFV 11     Bradley IFV M2A2
        ⊞ E H S BFV 22     Bradley IFV M2A2
      ⊞ U H S 2            Infantry
    ⊞ U H S 2              Infantry
```

Each vehicle section contains 2 BFVs.

Section 1 BFVs are labeled BFV 11 and BFV 22.

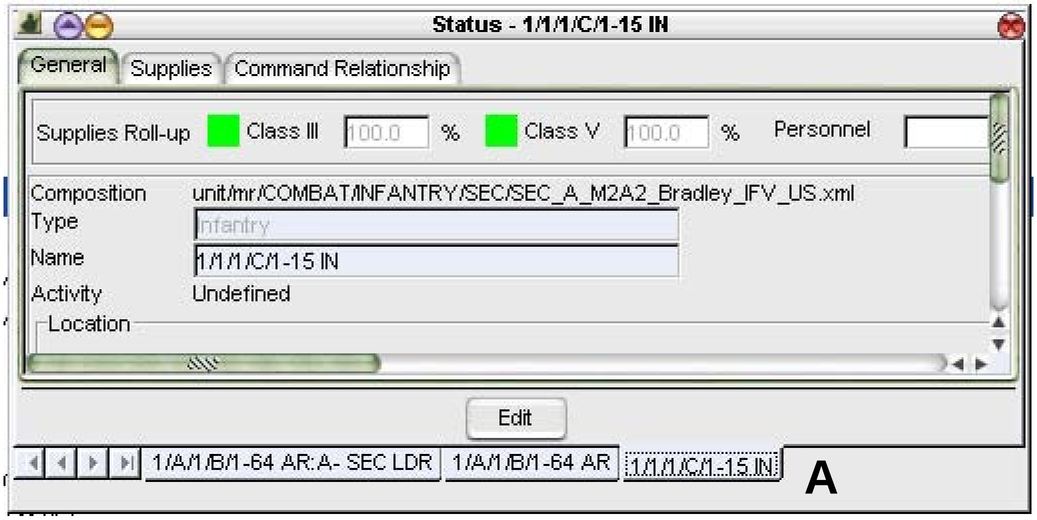
Section 2 BFVs are labeled BFV 32 and BFV 41.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

When displayed as an Infantry vehicle section on the Status window the OneSAF naming convention reads 1/1/1/C/1-15 IN (A).

The doctrinally correct naming would be A/1/C/1-15 IN.

When attempting to rename the vehicle section correctly the OneSAF software will still give it an additional numeric designator of 1 - as in 1/A/1/C/1-15 IN (B).


Status - 1/1/1/C/1-15 IN
General
Supplies
Command Relationship
Edit
1/A/1/B/1-64 AR:A- SEC LDR
1/A/1/B/1-64 AR
1/1/1/C/1-15 IN
A

Supplies Roll-up 🟩 Class III 100.0 % 🟩 Class V 100.0 % Personnel

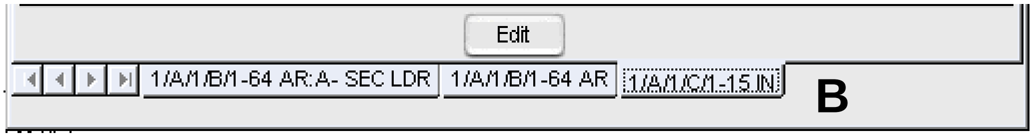
Composition unit/mr/COMBAT/INFANTRY/SEC/SEC_A_M2A2_Bradley_IFV_US.xml

Type Infantry

Name 1/1/1/C/1-15 IN

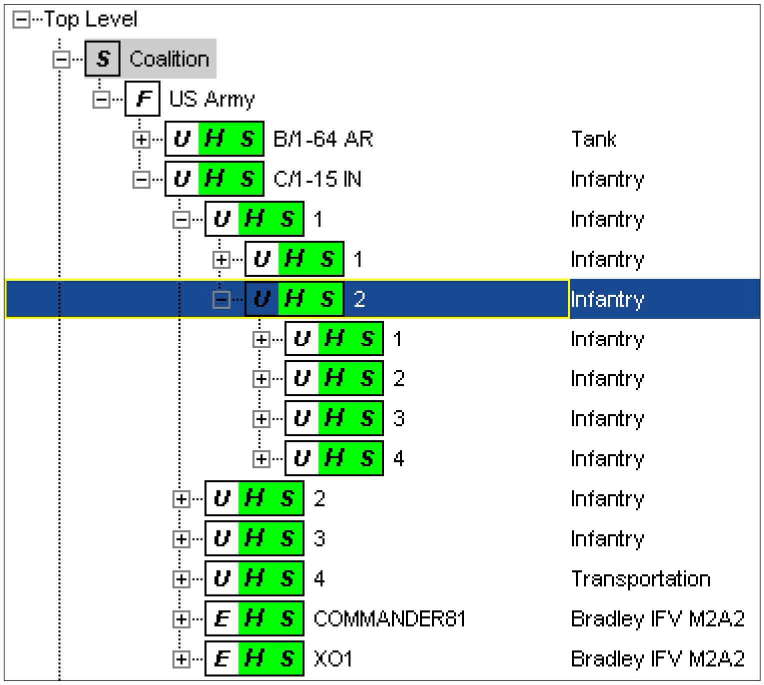
Activity Undefined

Location


Edit
1/A/1/B/1-64 AR:A- SEC LDR
1/A/1/B/1-64 AR
1/A/1/C/1-15 IN
B

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

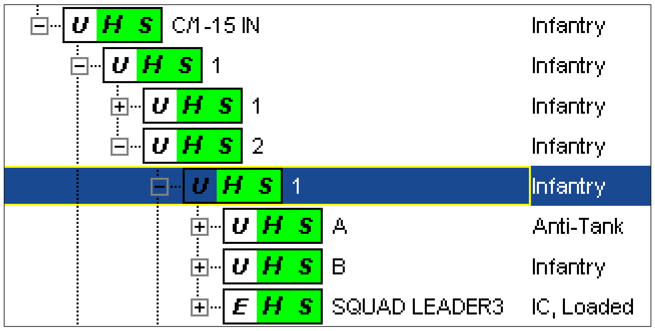
The Infantry Rifle Squads are similar in naming conventions. OneSAF assigns the unit designations to the Rifle Squads and Fire Teams.



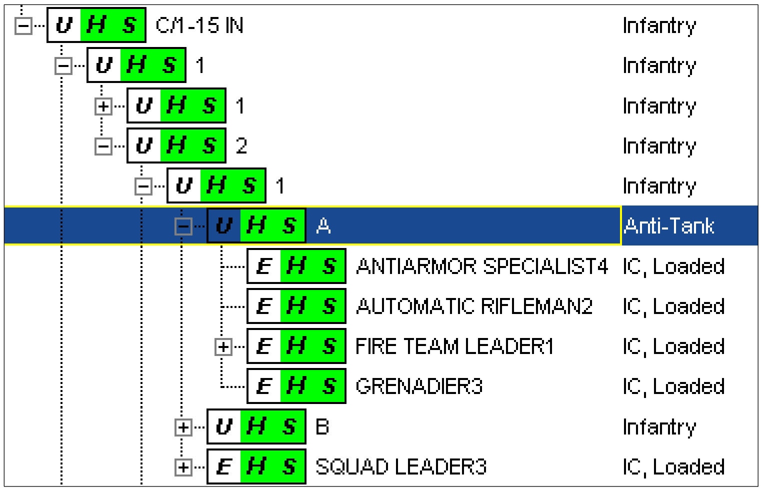
```
⊟ Top Level
  ⊟ S Coalition
    ⊟ F US Army
      ⊞ U H S B/1-64 AR                 Tank
      ⊟ U H S C/1-15 IN                 Infantry
        ⊟ U H S 1                       Infantry
          ⊞ U H S 1                     Infantry
          ⊟ U H S 2                     Infantry
            ⊞ U H S 1                   Infantry
            ⊞ U H S 2                   Infantry
            ⊞ U H S 3                   Infantry
            ⊞ U H S 4                   Infantry
        ⊞ U H S 2                       Infantry
        ⊞ U H S 3                       Infantry
        ⊞ U H S 4                       Transportation
        ⊞ E H S COMMANDER81             Bradley IFV M2A2
        ⊞ E H S XO1                     Bradley IFV M2A2
```

The subordinate labeled "2" contains the 3 9-man rifle squads (1, 2, and 3).

Each Squad contains 2 4-man teams and 1 Squad Leader.



```
⊟ U H S C/1-15 IN                       Infantry
  ⊟ U H S 1                             Infantry
    ⊞ U H S 1                           Infantry
    ⊟ U H S 2                           Infantry
      ⊟ U H S 1                         Infantry
        ⊞ U H S A                       Anti-Tank
        ⊞ U H S B                       Infantry
        ⊞ E H S SQUAD LEADER3           IC, Loaded
```

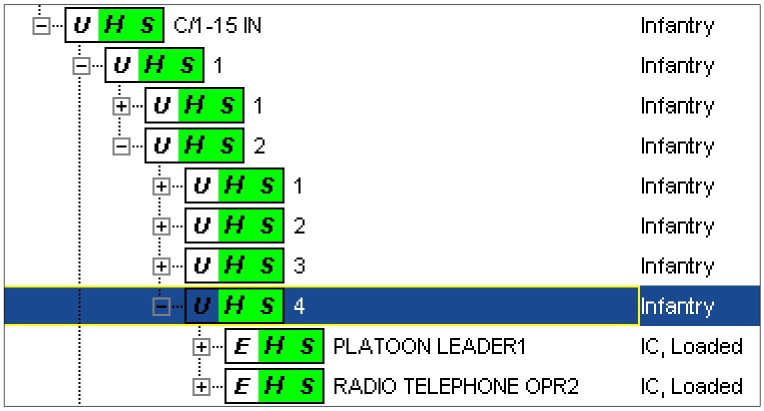


```
⊟ U H S C/1-15 IN                       Infantry
  ⊟ U H S 1                             Infantry
    ⊞ U H S 1                           Infantry
    ⊟ U H S 2                           Infantry
      ⊟ U H S 1                         Infantry
        ⊟ U H S A                       Anti-Tank
            E H S ANTIARMOR SPECIALIST4 IC, Loaded
            E H S AUTOMATIC RIFLEMAN2   IC, Loaded
          ⊞ E H S FIRE TEAM LEADER1     IC, Loaded
            E H S GRENADIER3            IC, Loaded
        ⊞ U H S B                       Infantry
        ⊞ E H S SQUAD LEADER3           IC, Loaded
```

Each Team contains four Individual Combatants. All unit designators are assigned by the OneSAF software.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

The fourth element of the dismounted rifle squads is an OneSAF unique element.

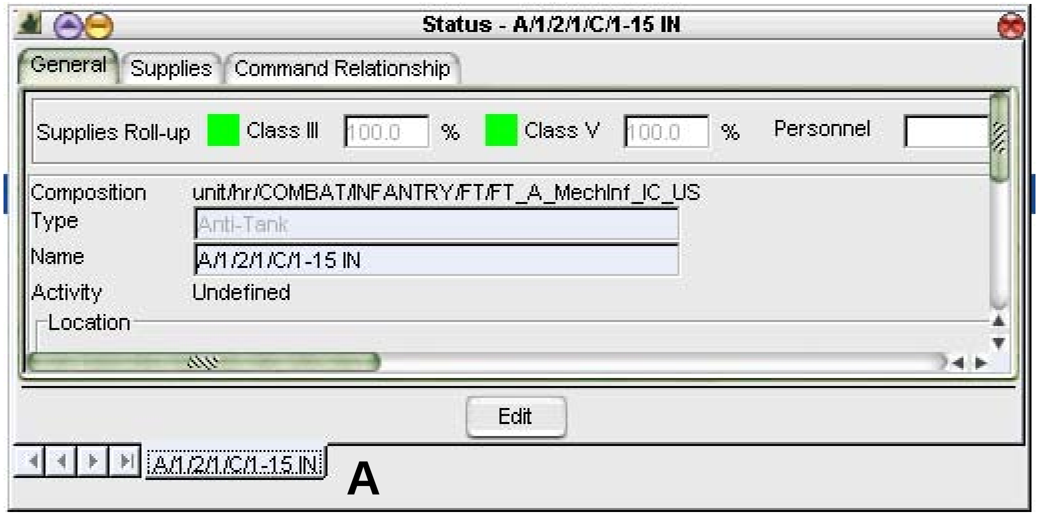


U H S C/1-15 IN	Infantry
U H S 1	Infantry
U H S 1	Infantry
U H S 2	Infantry
U H S 1	Infantry
U H S 2	Infantry
U H S 3	Infantry
U H S 4	Infantry
E H S PLATOON LEADER1	IC, Loaded
E H S RADIO TELEPHONE OPR2	IC, Loaded

It contains a Platoon Leader and a Radio Telephone Operator. OneSAF has assigned it a numeric designator of 4.

These are the 2 individual combatants (ICs) that will cause the most frustrations when assigning and executing a "Move Tactically" behavior. During iterations of the same scenario these 2 ICs do not mount their vehicle when told to do so. The vehicles will execute the "Move Tactically" behavior but only move as fast as the Platoon Leader and RTO can walk. The work around is to assign the behavior Magic Mount to all units as the first behavior in the Mission Editor.

When displayed as an Infantry Rifle Team on the Status window the OneSAF naming convention reads A/1/2/1/C/1-15 IN (A). The doctrinally correct naming would be TM A/1/1/C/1-15 IN. When attempting to rename the Rifle Team correctly the OneSAF software will still give it an additional designator of A - as in A/A/1/1/C/1-15 IN (B).



Status - A/1/2/1/C/1-15 IN

Supplies Roll-up 🟩 Class III 100.0 % 🟩 Class V 100.0 % Personnel

Composition unit/hr/COMBAT/INFANTRY/FT/FT_A_MechInf_IC_US

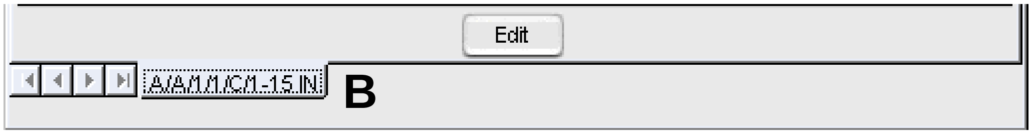
Type Anti-Tank

Name A/1/2/1/C/1-15 IN

Activity Undefined

Location

A/1/2/1/C/1-15 IN



A/A/1/1/C/1-15 IN

Configure the Unit to match a desired Task Organization

The OneSAF simulation software has the flexibility to tailor units and entities to match almost any real world organization or piece of equipment. This next lesson will teach you how to configure the task organization of an Armor and Infantry Company. Two methods will be explained; drag-and-drop, and add and delete. The steps used during this lesson apply to any modification of a unit's task organization. The example below is 1 (one) Armor Company (A/1-64 AR) and 1 (one) Infantry Company (C/1-15 IN). We will modify the Armor Company to create an Armor Company Team by adding 1 Infantry platoon from the Infantry Company (drag-and-drop method) and an Engineer Platoon from the "Create Actors" database (add-and-delete method). The first lessons are using drag-and-drop techniques to move one platoon to the other company and choosing the command relationship. The second lesson is adding and deleting units.

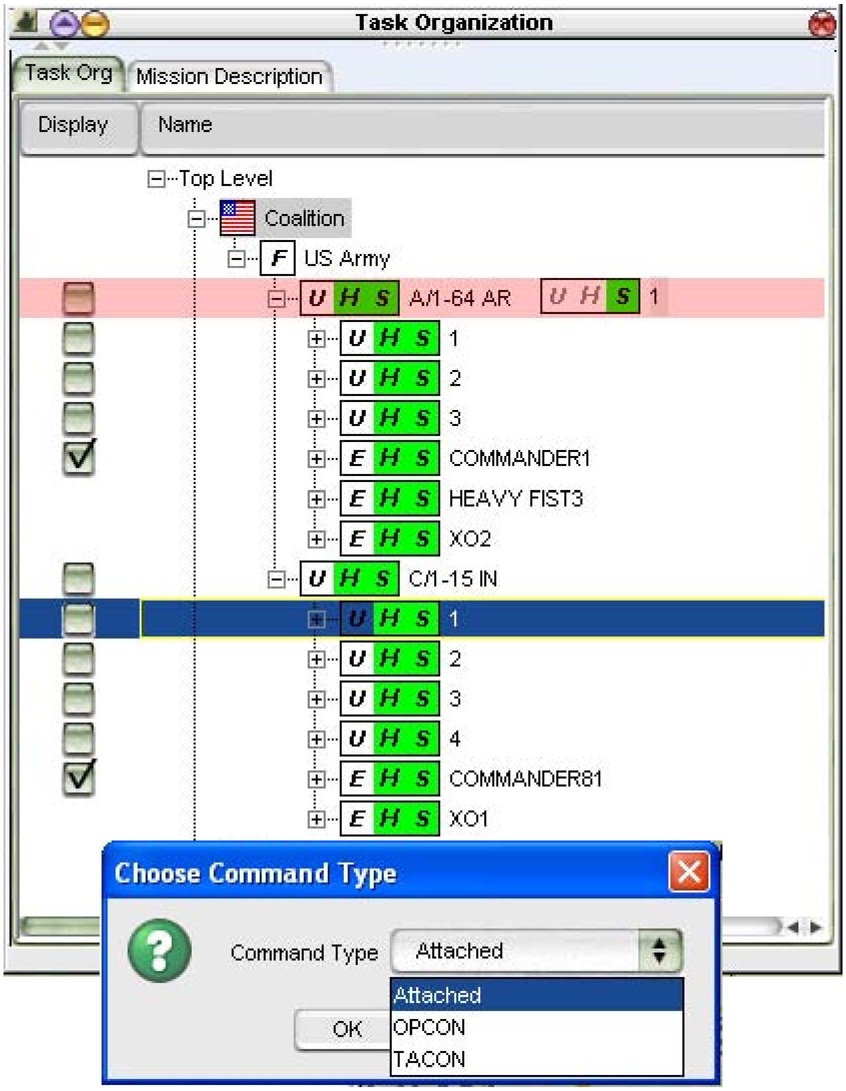
Drag-and-Drop

To begin, insure that the Task Organization window is visible. The screen capture below displays 2 companies with their respective MTO&E platoons and equipment that were selected from the create actors database. The labels next to each company's subordinates are assigned by the software with no input from the user.

- Expand the unit down to the lowest level to be modified by LC on the plus sign to its left.
- RC and ***HOLD*** on the words of the platoon being moved.
- Drag-and-drop the platoon in its new gaining headquarters.

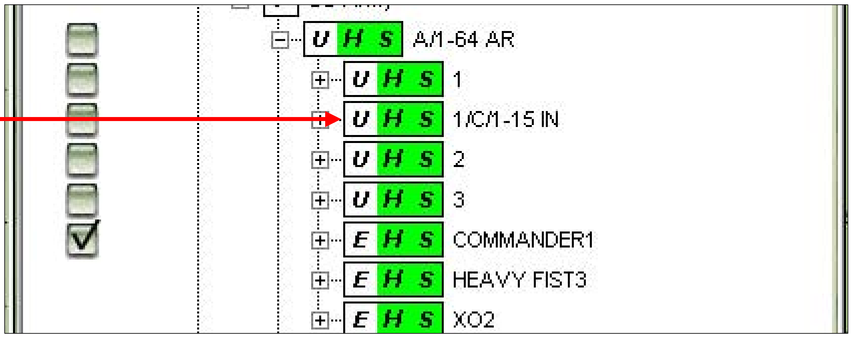
Once you drop the platoon into the gaining HQs, the "Choose Command Type" window will appear. In this example we are going to assign an "Attached" command relationship to the platoon. For more information on types of command relationships refer to FM 5-0, (Jan, 2005, pg F-5).

- LC "Attached"
- LC "OK"


Task Organization
Task Org
Mission Description
Display
Name
Top Level
Coalition
F US Army
U H S A/1-64 AR
U H S 1
U H S 1
U H S 2
U H S 3
E H S COMMANDER1
E H S HEAVY FIST3
E H S XO2
U H S C/1-15 IN
U H S 1
U H S 2
U H S 3
U H S 4
E H S COMMANDER81
E H S XO1
Choose Command Type
OK
Attached
OPCON
TACON

Command Type: Attached

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization


U H S A/1-64 AR
U H S 1
U H S 1/C/1-15 IN
U H S 2
U H S 3
E H S COMMANDER1
E H S HEAVY FIST3
E H S XO2

When complete the gaining HQs will have the additional platoon in its task organization.

When moving the platoon, the losing headquarters label will automatically be attached to the platoons' label. However, the physical location of the platoon does not change. You must go to the PVD and physically move the platoon from one location to another.

In the example just shown, the gaining headquarters was the tank company, A/1-64 AR, which was highlighted in pink. 1st Platoon from C/1-15 IN was attached to this unit.

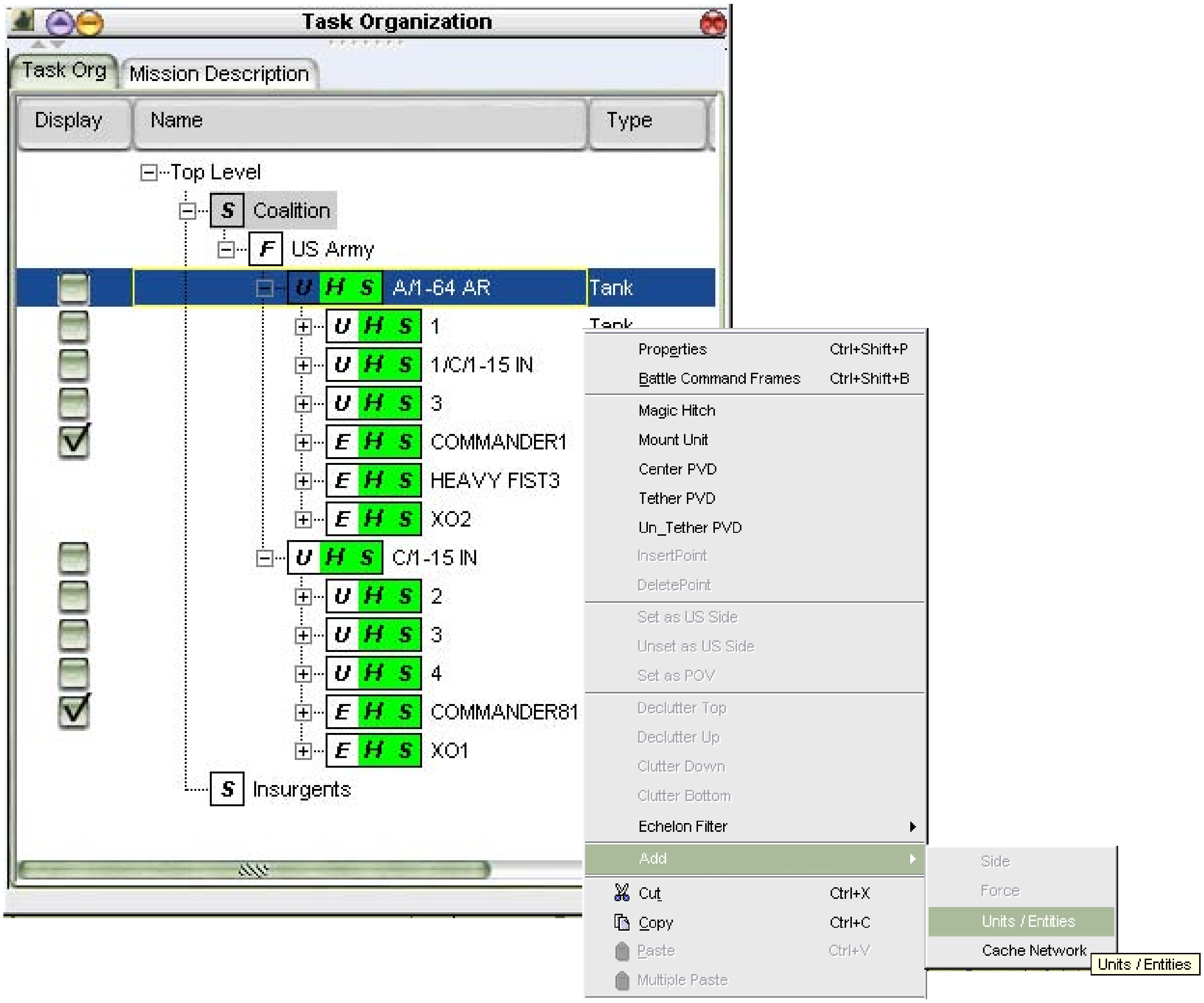
Relabeling subordinate units and entities follows the same steps as found on page 4-26 and 4-27.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

Adding and Deleting

Adding entities/units follows the same process as described earlier in the lesson "Select and Place Forces on the Map." However, first you must decide which higher headquarters will receive the entity/unit. Continuing with the theme from the previous page, we will continue to add units to the Armor Company Team.

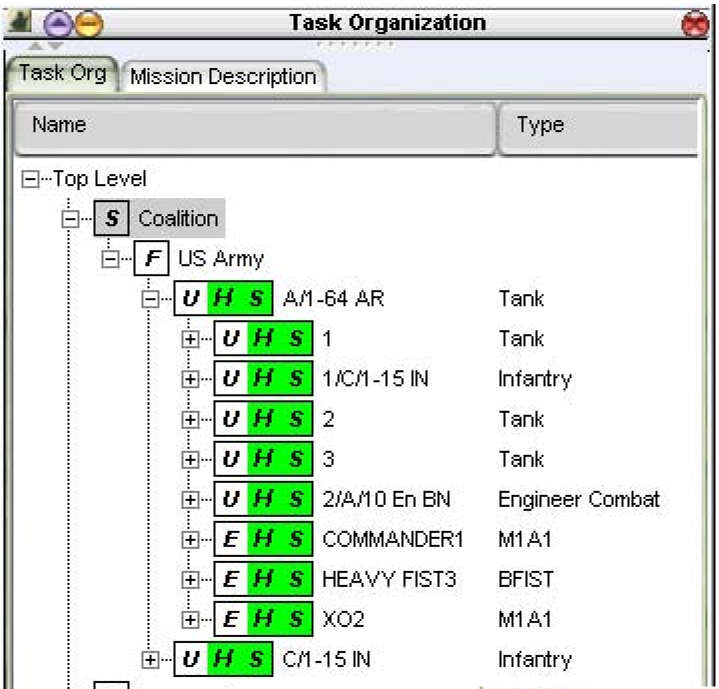
- **LC on the headquarters to highlight it**
- **RC on the headquarter name**
- **On the pop-up window, Mouse over "Add" – "Units/Entities" and LC**


Task Organization
Task Org
Mission Description
Display
Name
Type
Top Level
S Coalition
F US Army
U H S A/1-64 AR
Tank
U H S 1
Tank
U H S 1/C/1-15 IN
U H S 3
E H S COMMANDER1
E H S HEAVY FIST3
E H S XO2
U H S C/1-15 IN
U H S 2
U H S 3
U H S 4
E H S COMMANDER81
E H S XO1
S Insurgents
Properties Ctrl+Shift+P
Battle Command Frames Ctrl+Shift+B
Magic Hitch
Mount Unit
Center PVD
Tether PVD
Un_Tether PVD
InsertPoint
DeletePoint
Set as US Side
Unset as US Side
Set as POV
Declutter Top
Declutter Up
Clutter Down
Clutter Bottom
Echelon Filter
Add
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Multiple Paste
Side
Force
Units / Entities
Cache Network
Units / Entities

The same "Create Actors" window will appear requiring you to browse, select, name, and place a unit to add to A/1-64 AR. Follow the same steps found in the lesson "Select and Place Forces/Units/Entities on a Map to add another unit. The example that follows is of adding an Engineer platoon to A/1-64 AR.

4. Creating a Basic Scenario – Configure the Unit to match a desired Task Organization

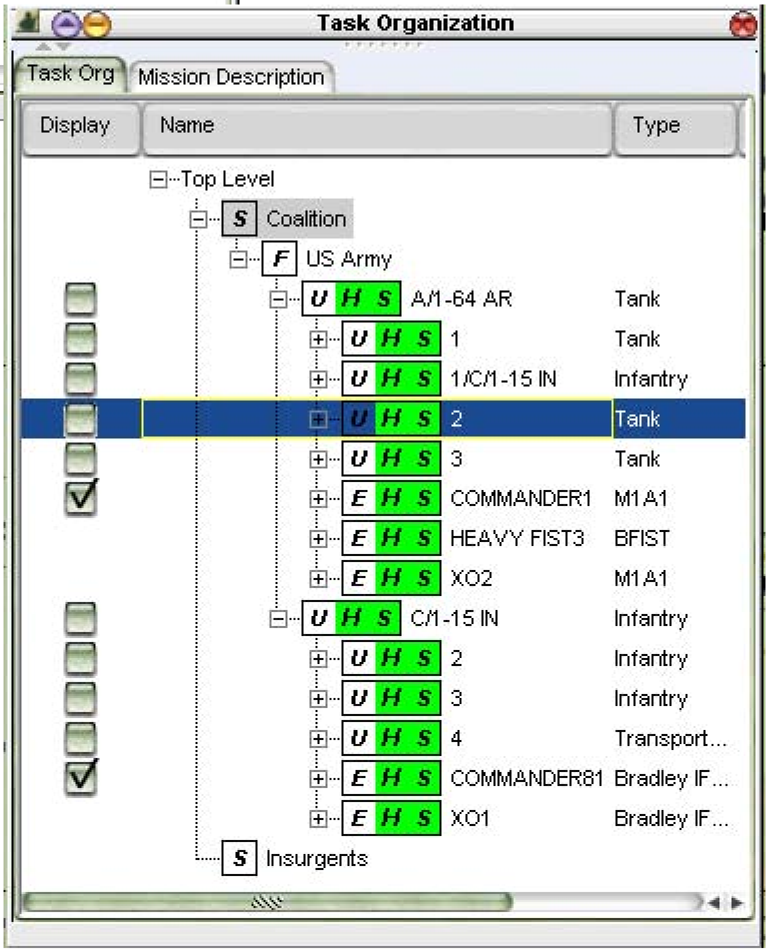
When complete, the task organization of the gaining HQs will have the additional unit assigned to it as seen in the example below. 2nd Platoon, Alpha Company, 10th Engineer Battalion (2/A/10 EN BN) was added to A/1-64 AR.



Name	Type
Top Level	
S Coalition	
F US Army	
U H S A/1-64 AR	Tank
U H S 1	Tank
U H S 1/C/1-15 IN	Infantry
U H S 2	Tank
U H S 3	Tank
U H S 2/A/10 En BN	Engineer Combat
E H S COMMANDER1	M1A1
E H S HEAVY FIST3	BFIST
E H S XO2	M1A1
U H S C/1-15 IN	Infantry
S Insurgents	

You can modify the task organization as much as you want. This example now shows an Armor Company Team with its attachments. Team Alpha consists of its HQ element (CO, XO, and FIST), 3 Tank Platoons, 1 Infantry Platoon, and 1 Engineer Platoon.

Remember, once you make any changes to the scenario it is good practice to save the most current version.



Display	Name	Type
	Top Level	
	S Coalition	
	F US Army	
☐	U H S A/1-64 AR	Tank
☐	U H S 1	Tank
☐	U H S 1/C/1-15 IN	Infantry
☐	U H S 2	Tank
☐	U H S 3	Tank
☑	E H S COMMANDER1	M1A1
	E H S HEAVY FIST3	BFIST
	E H S XO2	M1A1
☐	U H S C/1-15 IN	Infantry
☐	U H S 2	Infantry
☐	U H S 3	Infantry
☐	U H S 4	Transport...
☑	E H S COMMANDER81	Bradley IF...
	E H S XO1	Bradley IF...
	S Insurgents	

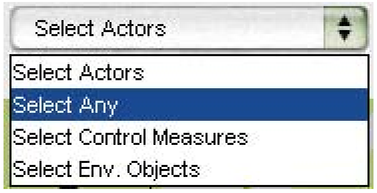
By expanding the Infantry Company, C/1-15 IN, you can see the loss of 1 Infantry Platoon.

Place Control Measures on a Map

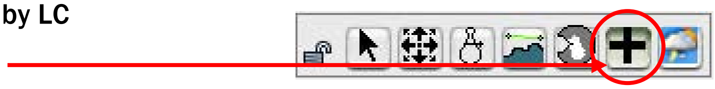
The OneSAF simulation software uses a series of graphical control measures to control the movement and actions of entities/units during the simulation scenario. These control measures graphically conform to FM 1-02 and the 2525A military standard. This lesson will demonstrate how to place, modify, move, and delete simple control measures. A point, linear, and area control measure will be discussed and demonstrated. The steps taught during this lesson apply whenever you are emplacing other control measures. In order to place a control measure on the map you must first have units in the task organization to assign the control measure to. We will use the graphic control measures of "checkpoint", "route", and "assembly area" to illustrate the required steps. These control measures are commonly used to control entities or units. Emplacing any control measure will generally follow these steps;

- Select the Control Measure
- Name the Control Measure
- Assign the Control Measure
- Draw the Control Measure
- Create the Control Measure

Change "Select Actors" to "Select Any" in the PVD toolbar. If this is not done, you will not see the control measure on your map.



Next, you must open the "Create Palette" by LC on the create button on the PVD tool bar.



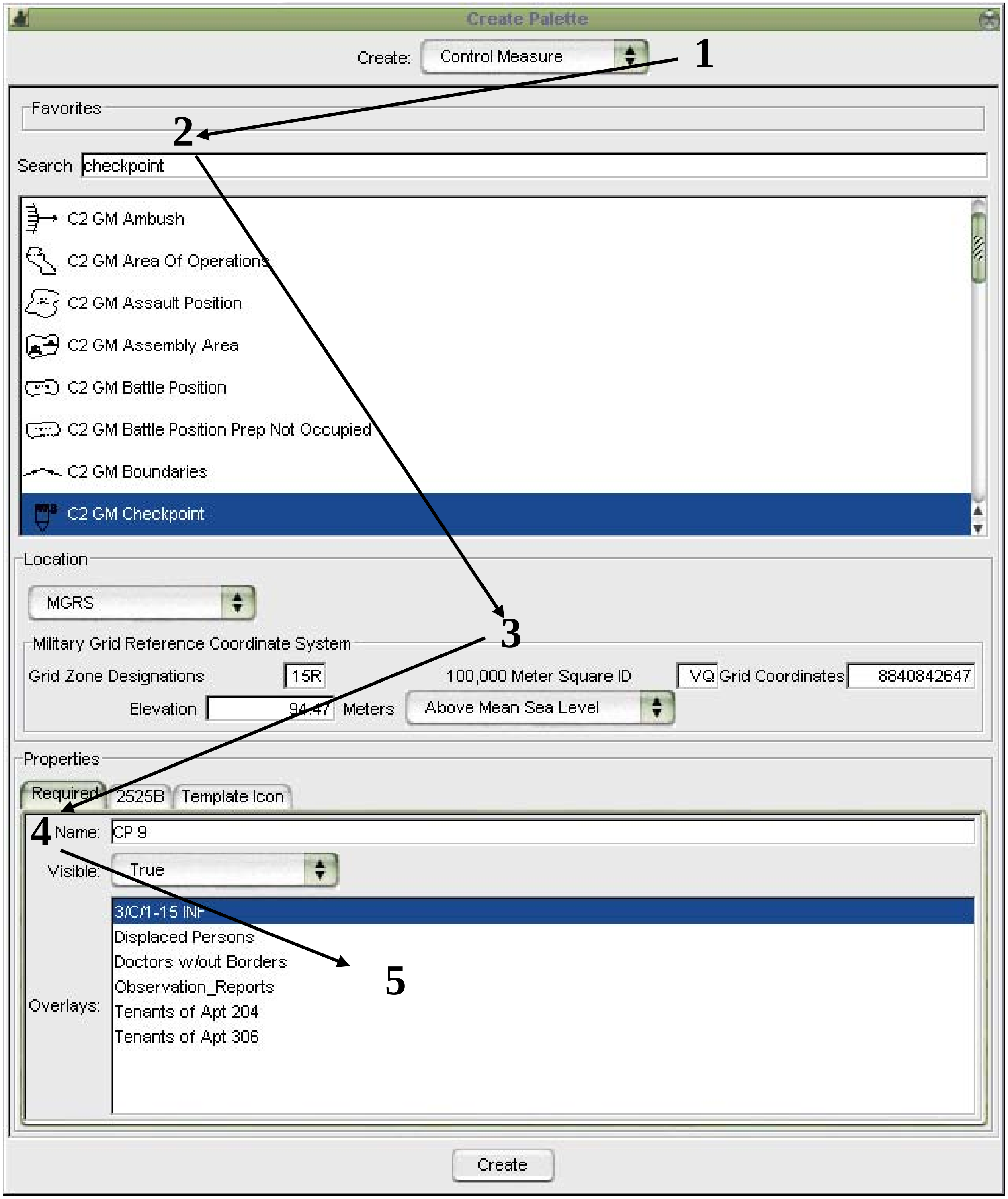
The "Create Palette" window, as seen on the next page, will appear. This window has many aspects for creating control measures, environmental points and areas, and point, linear, and area features. During this lesson we will concentrate only on control measures. The steps listed next will correspond to the numbers located on the "Create Palette" screen capture on the next page.

"Checkpoint" will be the first control measure discussed.

1. Insure "Control Measure" is visible in the drop-down window. An alphabetized list of control measures available appears. The palette has a search function that can help reduce the amount of time spent looking for the control measure.
2. Type 'checkpoint' into the search box. As you enter the name the search function begins its search for the first letters entered. Once you have entered "Checkpoint" completely you should see "C2 GM Checkpoint" highlighted in blue.
3. If you know the grid coordinate location for the checkpoint, you can input it here. If you are going to use the cursor to place the checkpoint this grid location will be populated when you left click on the map.
4. Name the checkpoint
5. Highlight the unit to which you want to assign the control measure. Units in the Task Organization window will automatically appear.

You cannot assign a control measure to an entity.
A team is the smallest element assignable.

4. Creating a Basic Scenario – Place Control Measures on a Map –Point Control Measure



Create: Control Measure

Search: checkpoint

- C2 GM Ambush
- C2 GM Area Of Operations
- C2 GM Assault Position
- C2 GM Assembly Area
- C2 GM Battle Position
- C2 GM Battle Position Prep Not Occupied
- C2 GM Boundaries
- C2 GM Checkpoint

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 15R

100,000 Meter Square ID: VQ

Grid Coordinates: 8840842647

Elevation: 94.47 Meters Above Mean Sea Level

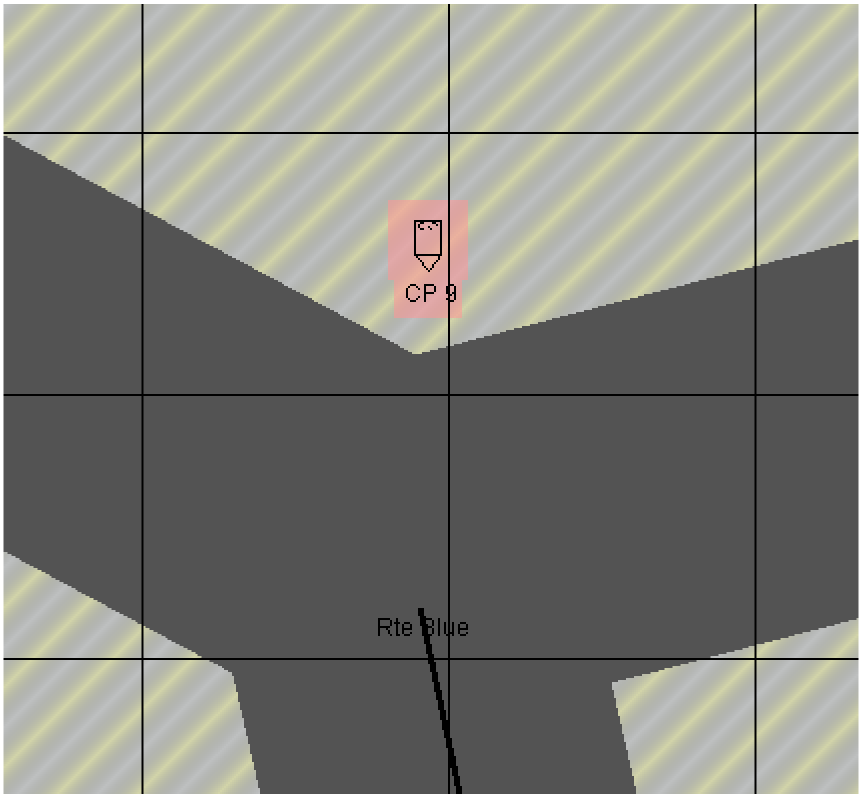
Properties

Name: CP 9

Visible: True

Overlays:
- 3/C/1-15 INF
- Displaced Persons
- Doctors w/out Borders
- Observation_Reports
- Tenants of Apt 204
- Tenants of Apt 306

6. A point control measure requires only 1 left click on the map to anchor the location



- Move the cursor to the location on the PVD screen where you want to place the checkpoint.
- LC once on the screen to anchor the checkpoint.
- LC the "create" button at the bottom of the "Create Palette".

This screen capture depicts placing a checkpoint at the intersection of 2 roads and the beginning of Route Blue.

How to move control measures is explained after the description of how to create an area control measure.

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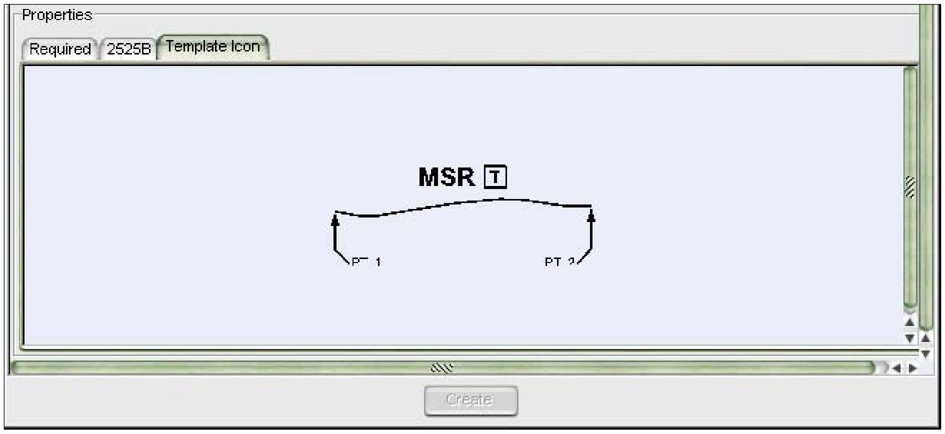
4. Creating a Basic Scenario – Place Control Measures on a Map –Linear Control Measure

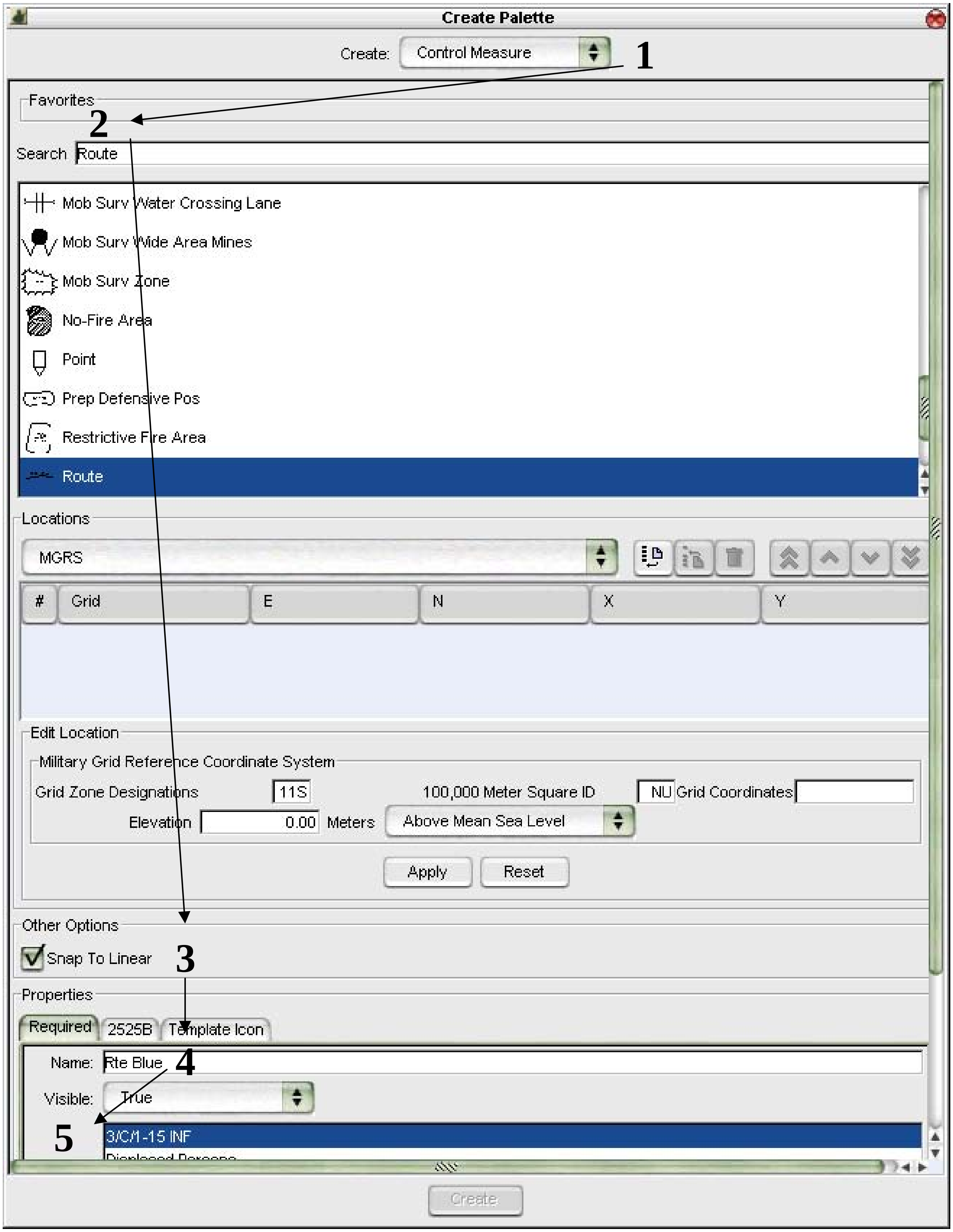
“Route” will be the next control measure discussed.

1. Insure “Control Measure” is visible in the drop-down window. An alphabetized list of control measures available appears. The palette has a search function that can help reduce the amount of time spent looking for the control measure. We will use the control measure “Route” for this lesson.
2. Type ‘route’ into the search box and hit the “enter” key on your KEYBOARD. The search function will display each control measure that has ‘route’ in its name. Continue hitting the “enter” key until you reach “Route”. Route will be highlighted in blue.
3. Check the box next to “Snap to Linear” if you want the Route to follow existing roads or other linear features.
4. Name the route
5. Highlight the unit you want to assign the control measure to. Entities/Units in the Task Organization window will automatically appear.

Within the “Properties” bottom half of the “Create Palette” there is the “Template Icon” tab. This tab shows you how to position the control measure on the map based on the directionality of the control measure and in what order the points must be placed. The “Route” control measure uses as few as 2 points, or as many as necessary to cover the distance and direction of the proposed route.



4. Creating a Basic Scenario – Place Control Measures on a Map –Linear Control Measure


Create Palette
1
Favorites
2
Mob Surv Water Crossing Lane
Mob Surv Wide Area Mines
Mob Surv Zone
No-Fire Area
Point
Prep Defensive Pos
Restrictive Fire Area
Route
Locations
#
Grid
E
N
X
Y
Edit Location
Military Grid Reference Coordinate System
Grid Coordinates
Apply
Reset
Other Options
3
Properties
Required
2525B
Template Icon
4
5
3/C/1-15 INF
Displaced Persons
Create

Create: Control Measure

Search: Route

MGRS

Grid Zone Designations: 11S

100,000 Meter Square ID: NU

Elevation: 0.00 Meters, Above Mean Sea Level

☑ Snap To Linear

Name: Rte Blue

Visible: True

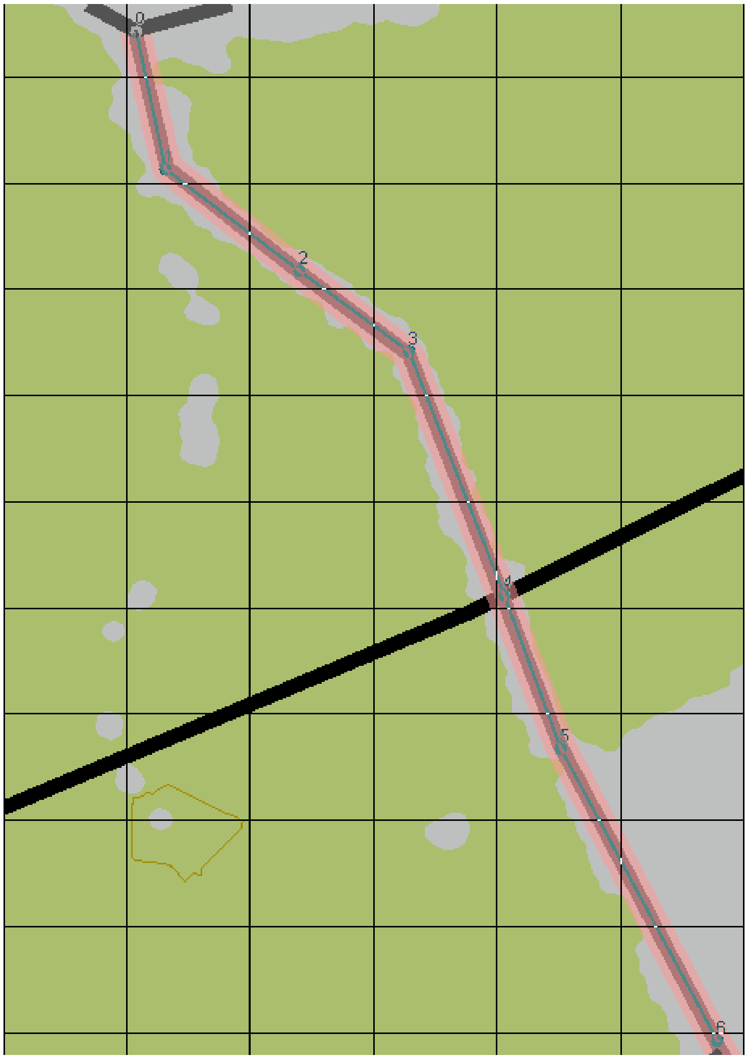
4. Creating a Basic Scenario – Place Control Measures on a Map –Linear Control Measure

1

6. Drawing all control measures on the map follows the same sequence

- Move the cursor to the location on the PVD screen where you want to start the route.
- LC once on the screen to anchor the route.
- Move the cursor to the next location.
- LC the screen. A grey line should connect the 2 points and each point should be numbered in the order selected.
- Continue to select points on the map until you have completed the route.

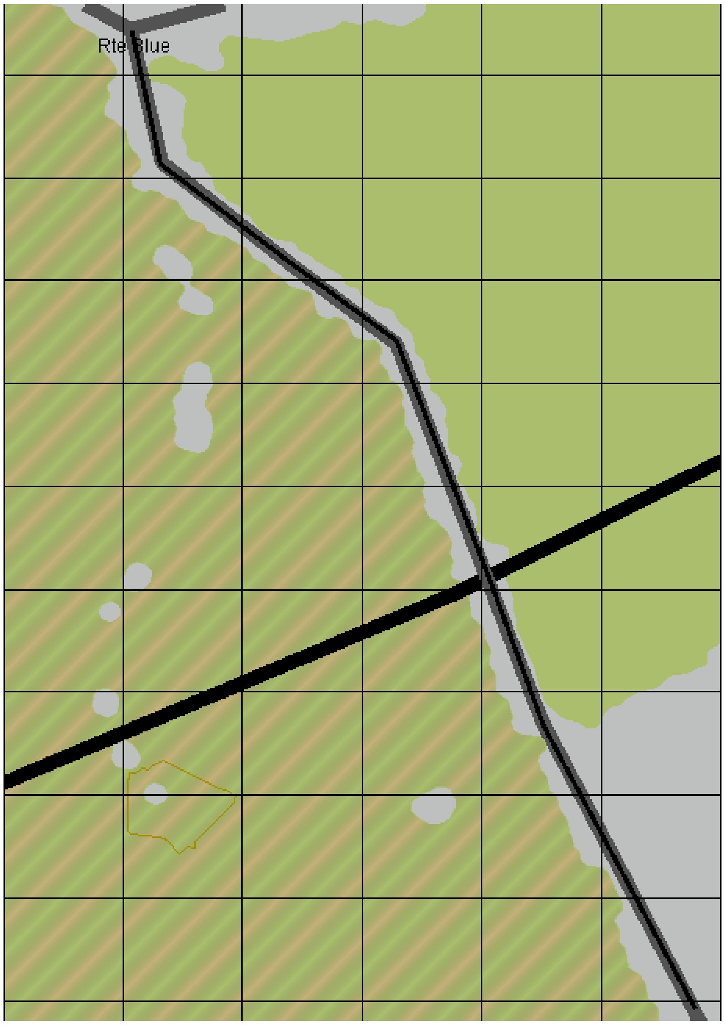
7. LC the "Create" button at the bottom of the "Create Palette".



4. Creating a Basic Scenario – Place Control Measures on a Map –Linear Control Measure

The control measure will be drawn on the map with a solid black line and the Start, Release, and Route name visible. If these points and the name are not visible you must access the OneSAF desktop (see Chapter 3, page 3-4), go to Preferences and toggle "Enable Control Measure Names" and "Display Route Start and Release Points" to "True". Because the system assigns the start and release point, you cannot use the route backwards. If you assign an entity/unit to the route, they will automatically move to the designated start point to begin their movement.

If you are going to draw a route that will follow a road; ensure "Snap to Linear" is checked on the Create Palette; select the start point and LC the road on the screen; move to the end point on the road and LC again. The software will automatically fill in the additional points along the road at each turn.



4. Creating a Basic Scenario – Place Control Measures on a Map –Area Control Measure

“Assembly Area” will be the last control measure discussed.

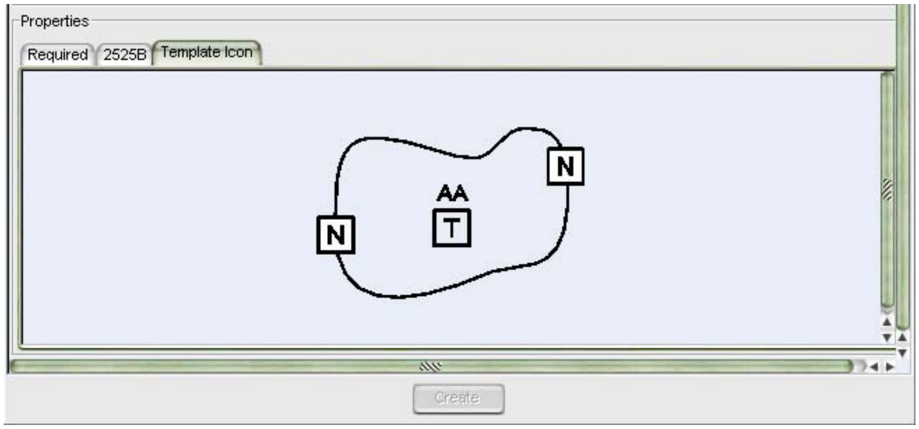
1. Insure “Control Measure” is visible in the drop-down window. An alphabetized list of control measures available appears. The palette has a search function that can help reduce the amount of time spent looking for the control measure.
2. Type ‘Assembly Area’ into the search box. As you enter the name the search function begins its search for the first letters entered. Once you have entered “Assembly Area” completely you should see “Assembly Area” highlighted in blue.
3. Select the “Drawing Mode” you want to use.

- Freehand (create your own shapes) ○ Circle (click and drag to create circle)

☐ - Square (click and drag to create square)

4. Name the assembly area
5. Highlight the unit to which you want to assign the control measure. Units in the Task Organization window will automatically appear.

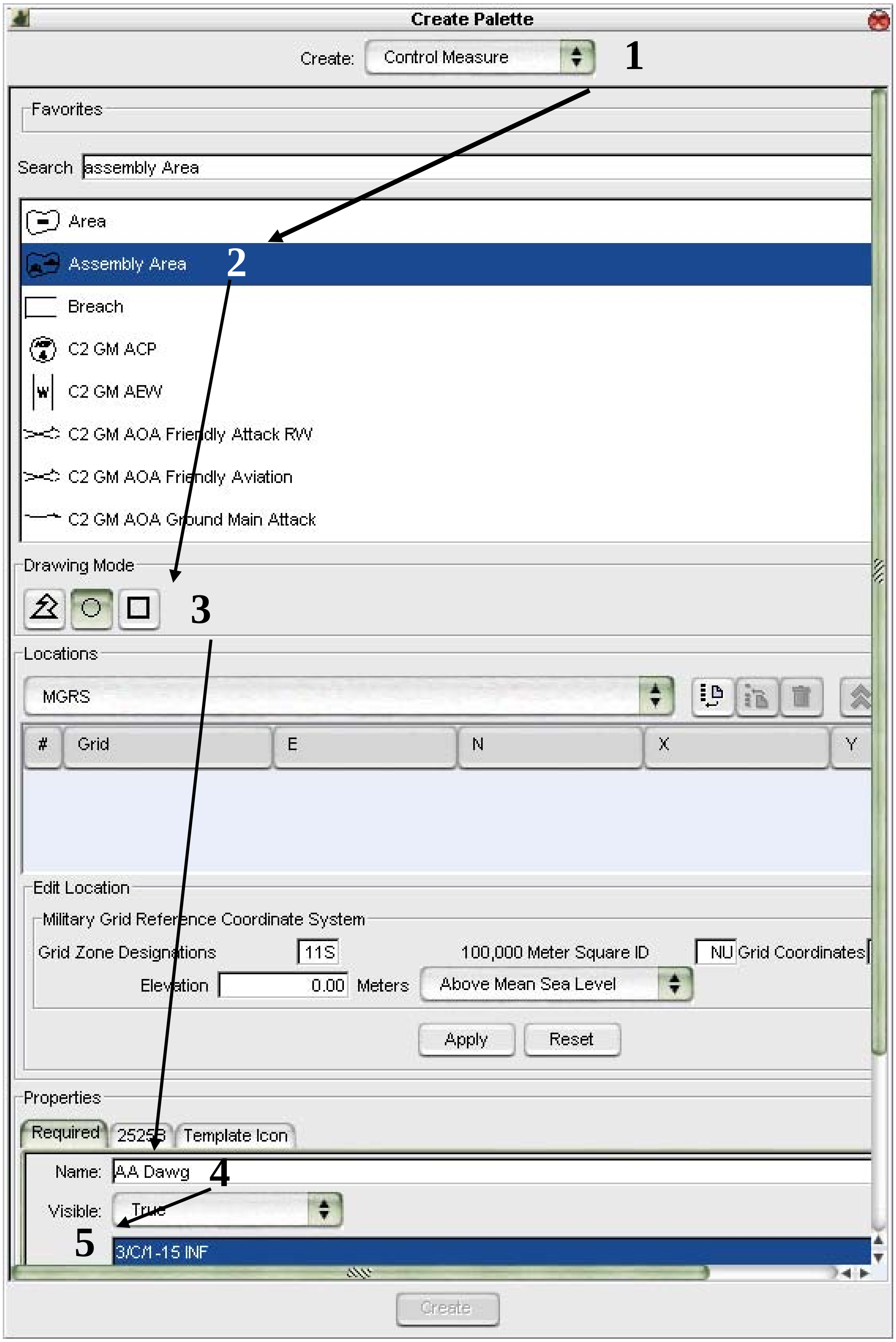
The “Template Icon” tab depicts the graphic control measure as seen in FM1-02, the “N” and “T” fields are explained in the table below extracted from FM 1-02 (Sept, 2004).



Field	Field Type	Description	Text/Graphic
B	Echelon	A symbol modifier that denotes the size of a unit (see table 5-6, page 5-33).[1]	Both
N	Hostile (Enemy)	Denotes hostile symbol. The letters “ENY” are used when color red is not used (see paragraph 7-2) “colors.”	Text
T	Unique Designation	An alphanumeric designator that uniquely identifies a particular unit (designation).	Text
AH	Country Indicator	A two-letter code that indicates the country of origin of the unit (see chapter 2).	Text

[1] The symbol for the highest echelon unit on lateral boundary is used for the boundary line. The symbol for the lower echelon unit on a rear or forward boundary is used for the boundary line.

4. Creating a Basic Scenario – Place Control Measures on a Map –Area Control Measure



Create: Control Measure

Search assembly Area

Locations: MGRS

Grid Zone Designations 11S

100,000 Meter Square ID NU

Elevation 0.00 Meters Above Mean Sea Level

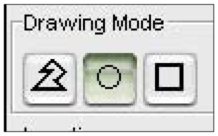
Name: AA Dawg

Visible: True

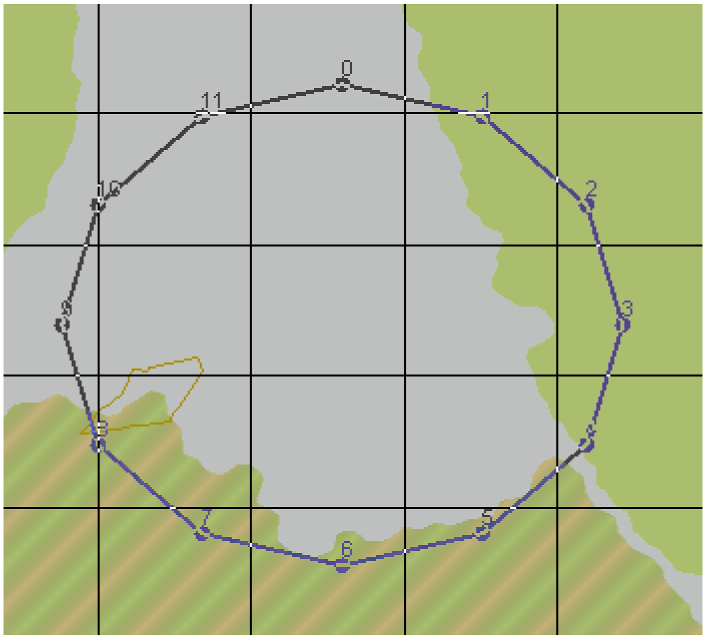
3/C/1-15 INF

Create Palette
1
Favorites
Area
Assembly Area
2
Breach
C2 GM ACP
C2 GM AEW
C2 GM AOA Friendly Attack RW
C2 GM AOA Friendly Aviation
C2 GM AOA Ground Main Attack
Drawing Mode
3
Locations
#
Grid
E
N
X
Y
Edit Location
Military Grid Reference Coordinate System
Grid Coordinates
Apply
Reset
Properties
Required
2525B
Template Icon
4
5
Create

6. An area control measure requires multiple points to connect into a closed graphic. The points are anchored to the map every time you left click. How many times you must left click on the map depends on the method you decide to use. The screen shots below depict using the circle method to draw an assembly area.

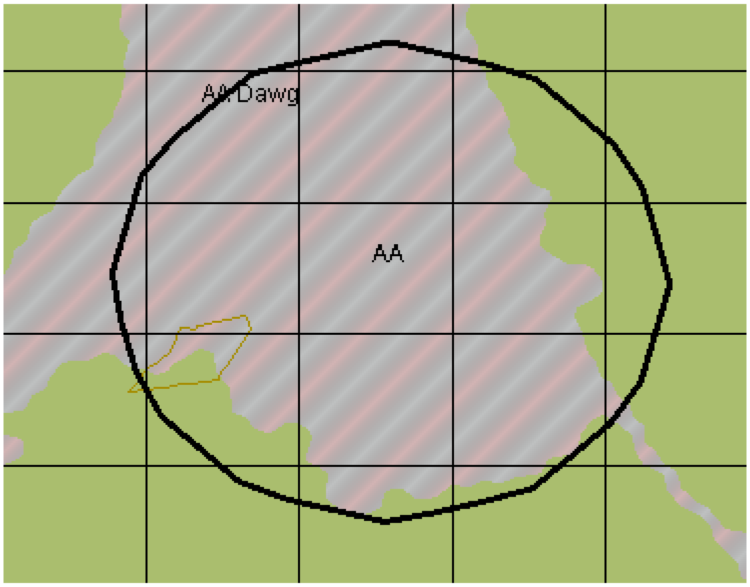


- Select the drawing mode by LC on the button. The selected button will change color from clear to greyed-out.



- Move the cursor to the center of the location on the PVD screen where you want to place the assembly area.
- LC and **HOLD** on the screen to anchor the assembly area.
- Drag the cursor to size the circle.
- Release the cursor.
- LC the “create” button at the bottom of the “Create Palette”.

The screen capture below depicts the completed assembly area.

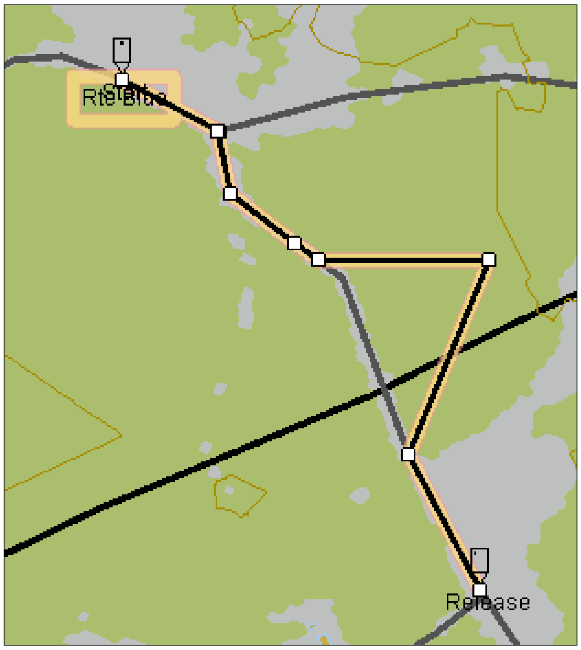


4. Creating a Basic Scenario – Place Control Measures on a Map –Moving and Deleting Control Measures

Moving Control Measures

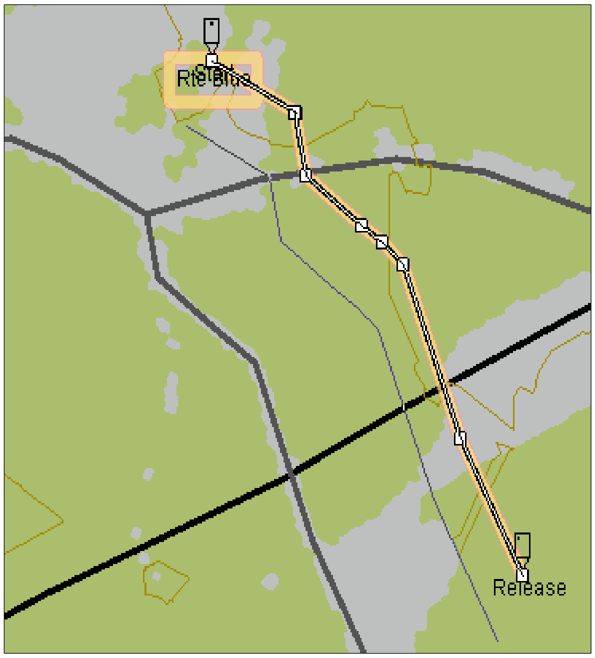
The following steps apply to moving all control measures.

The control measure can be moved through a drag and drop method, or you can move individual points. The “SHIFT” key is used in conjunction with the commands to LC and RC.



To move an individual point

- LC the control measure to highlight it.
- Hold down the SHIFT key to expose the points. (They will appear as small white boxes).
- LC and HOLD on a white box to move an individual point.
- Drag and drop the point to its new location.
- Release the LC first.
- Release the SHIFT key.



To move the whole control measure

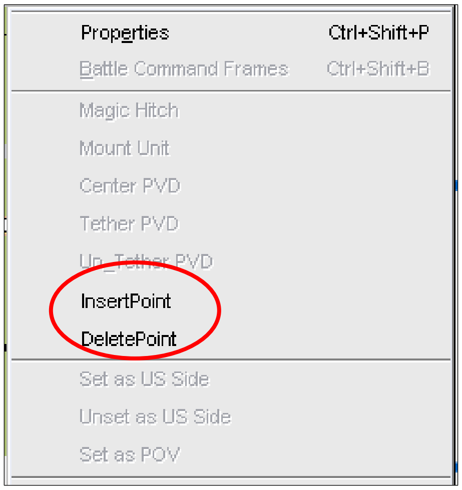
- LC the control measure to highlight it.
- Hold down the SHIFT key to expose the points.
- LC and HOLD anywhere on the highlighted road **between the points** (The cursor will turn into a 4 pointed directional arrow).
- Drag and drop the control measure to its new location.
- Release the LC first.
- Release the SHIFT key.

4. Creating a Basic Scenario – Place Control Measures on a Map –Moving and Deleting Control Measures

You can also insert or delete a point from the control measure. The steps for exposing the points (white boxes) are the same as moving the control measure.

However, to insert/delete a point while holding down the SHIFT key:

- RC on the point closest to where you need to insert a point or the point to be deleted.
- Mouse over insert point or delete point on the pop-up window and LC.
- Move the new point to its location (insert only).
- Release the SHIFT key.

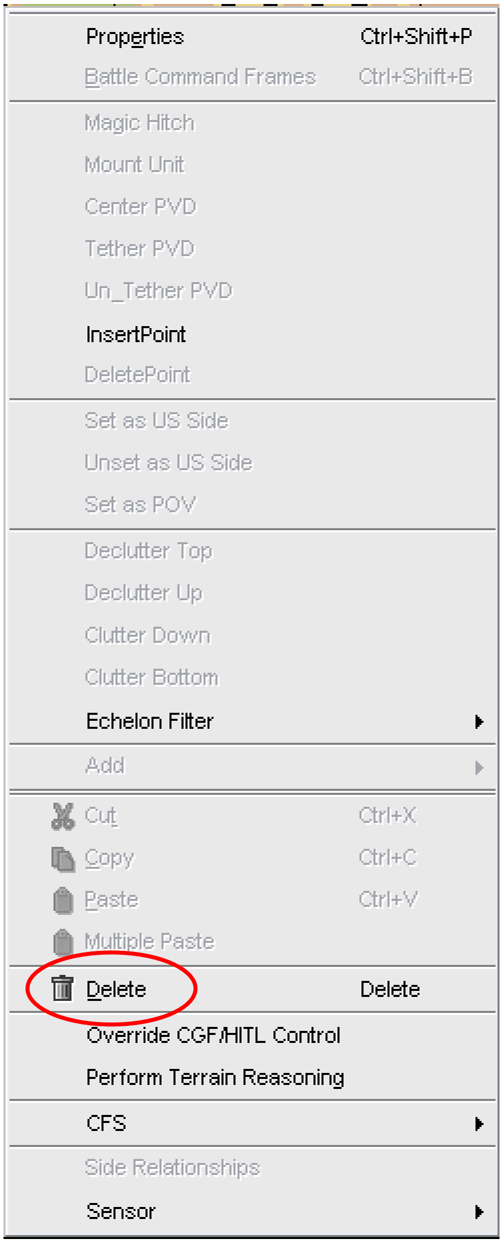

Properties Ctrl+Shift+P
Battle Command Frames Ctrl+Shift+B
Magic Hitch
Mount Unit
Center PVD
Tether PVD
Un_Tether PVD
InsertPoint
DeletePoint
Set as US Side
Unset as US Side
Set as POV

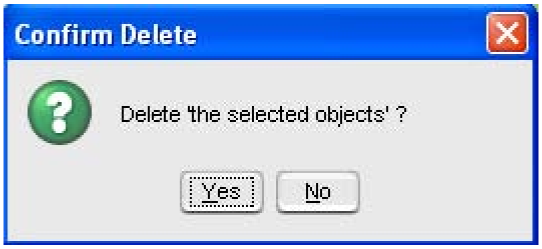
4. Creating a Basic Scenario – Place Control Measures on a Map –Moving and Deleting Control Measures

Deleting a Control Measure

To delete the control measure

- Mouse over the control measure and RC.
- In the pop-up window mouse over the word “delete” and LC.
- LC “Yes” on the “Confirm Delete” pop-up window.


Properties Ctrl+Shift+P
Battle Command Frames Ctrl+Shift+B
Magic Hitch
Mount Unit
Center PVD
Tether PVD
Un_Tether PVD
InsertPoint
DeletePoint
Set as US Side
Unset as US Side
Set as POV
Declutter Top
Declutter Up
Clutter Down
Clutter Bottom
Echelon Filter
Add
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Multiple Paste
Delete Delete
Override CGF/HITL Control
Perform Terrain Reasoning
CFS
Side Relationships
Sensor


Confirm Delete
Yes
No

Delete 'the selected objects' ?

Remember when working with control measures you must have “select any” displayed (not “select actors”) in the PVD tool bar (reference pages 2-9 and 4-36).

Appendix H lists the available control measures by Command and Control General Maneuver, Combat Service and Support, Mobility/Counter-Mobility/Survivability, and Fire Control Measures.

Assign Tasks to Entities and Units

At the beginning of this chapter we referred you to the use of a concept sketch to help in developing the simulation scenario. The sketch assisted in drawing the appropriate control measures on the PVD screen. Now the sketch will help you identify specified and implied tasks that must be programmed into the scenario using the previously drawn control measures. This section, "Assigning Tasks to Entities and Units," is the cornerstone of the OneSAF simulation and will show you how to program the task (behaviors). The tasks direct the entity or unit to complete tasks that are programmed in a sequence that mirrors reality. For example, if you want an enemy entity to emplace a mine or IED, then you must first give the entity the mine to carry and emplace.

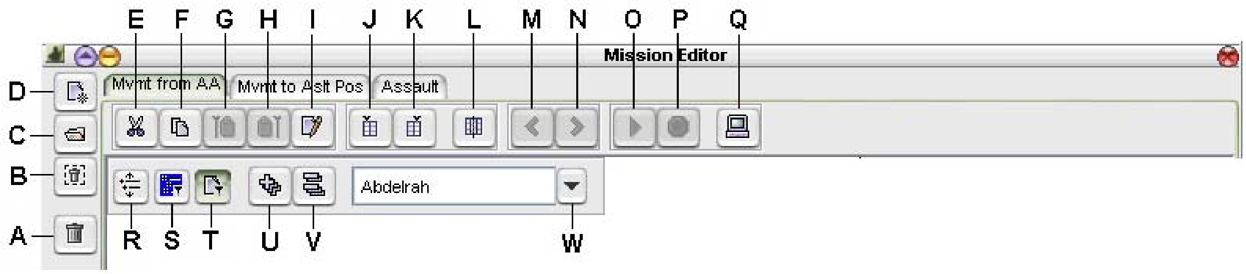
To aid in sequencing the behaviors OneSAF uses the Mission Editor which is laid out in an Excel ™ Spreadsheet format. The Mission editor uses "Mission Tables", similar to Excel worksheets, as a means to plan and assign behaviors to units and entities by different phases of the mission e.g. reconnaissance, movement, and assault phases. The far left side of the Mission Editor lists the Task Organization that you created. It can be expanded and contracted to focus on the units of interest. Within each "Mission Table" are a series of columns and rows used to assign the behavior to each subordinate of each unit. The columns depict the phases in the mission. Multiple columns can be added to each table to facilitate a sequenced flow of activity. The simulation requires you to plan at the implied as well as specified task level of detail.

4. Creating a Basic Scenario – Assign Tasks to Entities and Units

Before you begin the assignment process, a brief description of the mission editor buttons is necessary.

If there are no tables visible, you must first LC the button label "D".

There are 2 rows of buttons available in the Mission Editor Toolbar. The first row is the primary row which allows input that ranges from the standard cut and paste, to running the scenario. The second row allows you to apply filters to limit or expand your view of those units' assigned behaviors.



__A.__ Delete the Matrix

__B.__ Close the Matrix

__C.__ Open Existing Matrix

__D.__ Create New Matrix

__E.__ Cut selected Task

__F.__ Copy selected Task

__G.__ Paste before selected task

__H.__ Paste after selected task

__I.__ Edit selected phase/task parameters

__J.__ Insert new phase/task before selected

__K.__ Insert new phase/task after selected

__L.__ Delete selected phase/task

__M.__ Move phase/task left

__N.__ Move phase/task right

__O.__ Execute selected phase/task

__P.__ Stop selected phase/task

__Q.__ Enable X Viewer Support

__R.__ Remove Filters

__S.__ View Selected

__T.__ View tasked

__U.__ Expand

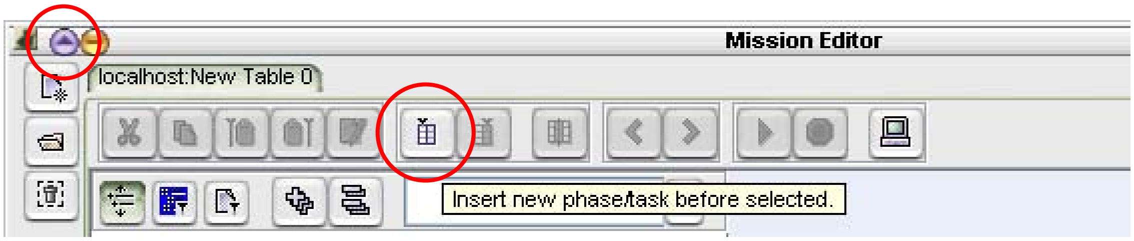
__V.__ Collapse

__W.__ Quick view

When returning to a saved scenario the mission editor might only show you the entities/units that have been tasked. To display all units use the "R" button to remove the filters.

4. Creating a Basic Scenario – Assign Tasks to Entities and Units

To make it easier to work in the Mission Editor Window expand the window by LC'ing on the maximize arrow located in the upper left corner.

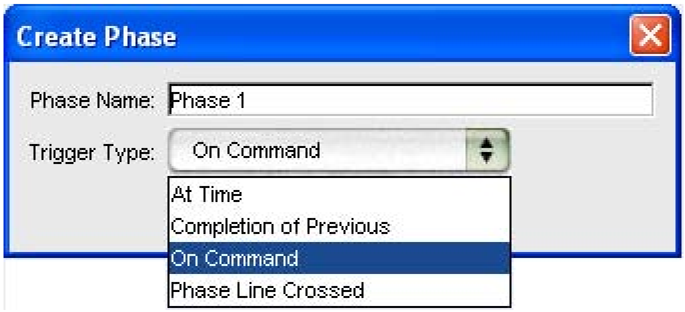

Mission Editor
localhost:New Table 0
Insert new phase/task before selected.

A new scenario has one table but no phases or tasks visible in the mission editor window.

To add a phase to the existing table;

- LC the "Insert new phase/task before selected" button.

The "Create Phase" pop-up window appears. Name the phase in the small window next to "Phase Name"; select the trigger to execute the phase and LC "OK". The 4 different triggers will be discussed in more detail in the next few pages. You can always edit the phases to change the name and trigger at any time prior to execution.


Create Phase

Phase Name: Phase 1

Trigger Type: On Command

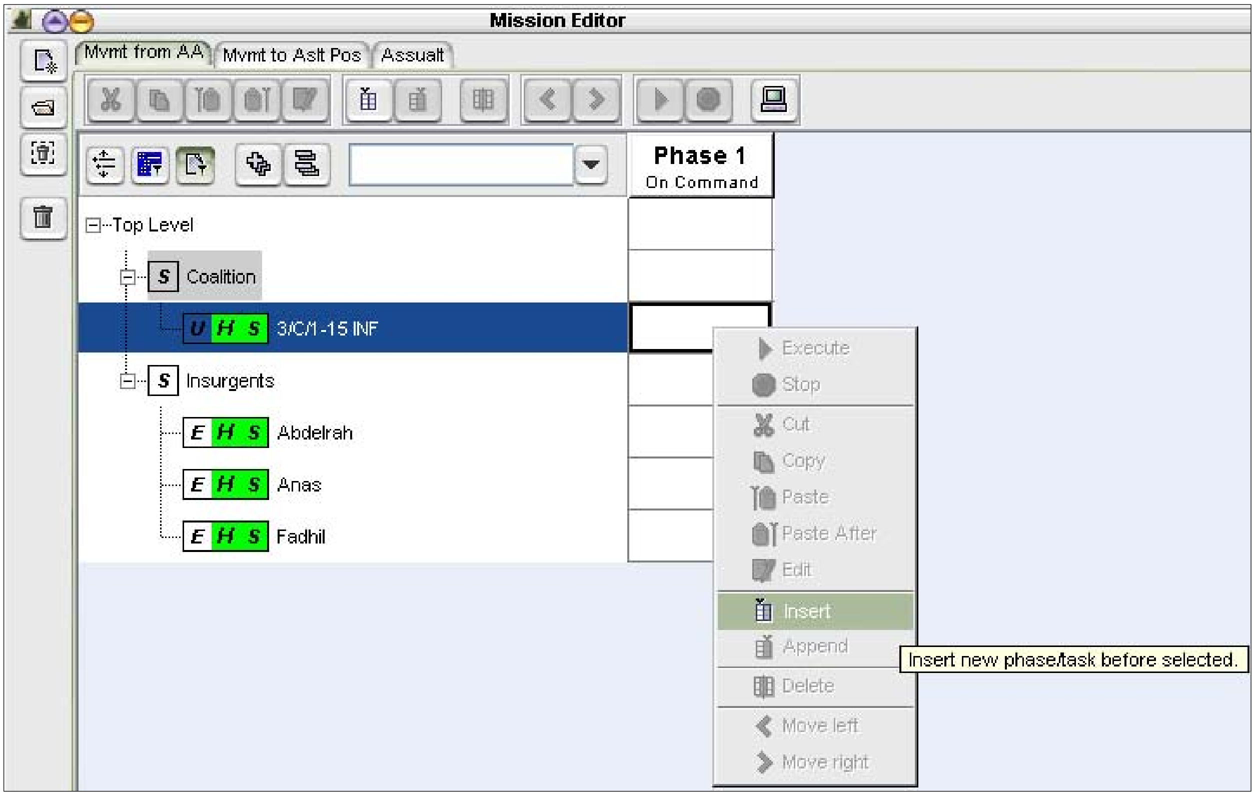
At Time
Completion of Previous
On Command
Phase Line Crossed

The remainder of this section will explain how to assign the behavior "Move Tactically". The steps covered here can be applied to the other behaviors available for each entity/unit.

After creating a phase, the next step is to insert tasks for each entity or unit. When assigning tasks you can assign the task to the highest level of headquarters, i.e. Armor Company, and it will be performed by all the subordinate elements, i.e. Armor platoons or attachments. Or, you can assign the task to an Entity or subordinate unit and only the Entity or subordinate unit will perform it. Assigning tasks generally follows these steps;

- Select the Entity/Unit to assign the task to.
- Select the task to assign.
- Modify the required, optional, and rules of engagement task parameters.
- Copy and paste the task to like entities/units.

When assigning tasks you must have the required control measures drawn. For example if you are going to move the entire Armor Company from one location to another, then you must have the route control measure pre-drawn. Subsequently, if you are going to split the platoons and move them each to a different location, then you must have pre-drawn routes for each platoon.


Mission Editor
Mvmt from AA
Mvmt to Aslt Pos
Assualt
Phase 1
On Command
Top Level
S Coalition
U H S 3/C/1-15 INF
S Insurgents
E H S Abdelrah
E H S Anas
E H S Fadhil
Execute
Stop
Cut
Copy
Paste
Paste After
Edit
Insert
Append
Delete
Move left
Move right
Insert new phase/task before selected.

To begin;

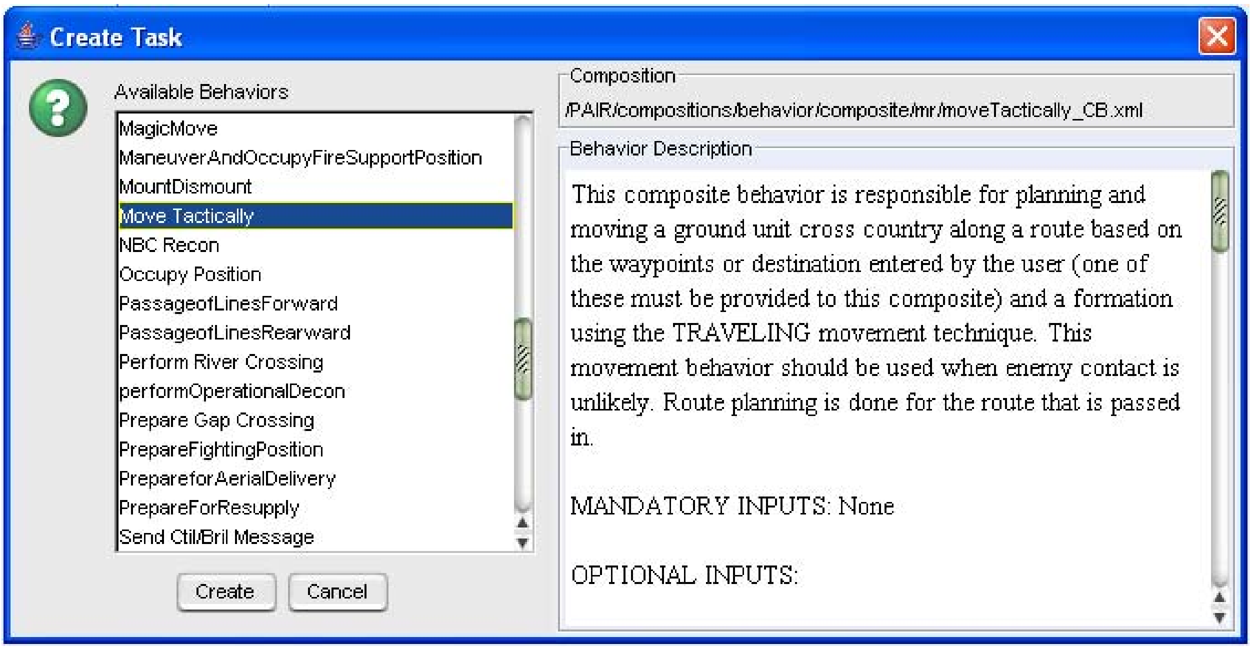
LC on the Entity/Unit name to highlight (in this example we choose 3/C/1-15 IN, the BFV Platoon). Assigning this task at the Platoon level will apply it to the subordinate units and entities, i.e. the rifle squads and vehicle sections.

4. Creating a Basic Scenario – Assign Tasks to Entities and Units

There are 2 ways to insert a task:

- Double LC in the box opposite the selected unit, or
- RC in the box opposite the selected unit
  - Mouse over "Insert" and LC

Whichever method you choose, the next window to open will be the "Create Task" window. This window is separated into 2 sections. The left section lists only the scrollable and alphabetized tasks assignable to the entity/unit (filtered by echelon). The right half of the window is a description of each task when they are highlighted.


Create Task
Available Behaviors
MagicMove
ManeuverAndOccupyFireSupportPosition
MountDismount
Move Tactically
NBC Recon
Occupy Position
PassageofLinesForward
PassageofLinesRearward
Perform River Crossing
performOperationalDecon
Prepare Gap Crossing
PrepareFightingPosition
PrepareforAerialDelivery
PrepareForResupply
Send Ctil/Bril Message
Create
Cancel

Composition

/PAIR/compositions/behavior/composite/mr/moveTactically_CB.xml

Behavior Description

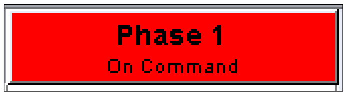
This composite behavior is responsible for planning and moving a ground unit cross country along a route based on the waypoints or destination entered by the user (one of these must be provided to this composite) and a formation using the TRAVELING movement technique. This movement behavior should be used when enemy contact is unlikely. Route planning is done for the route that is passed in.

MANDATORY INPUTS: None

OPTIONAL INPUTS:

To continue assigning the "Move Tactically" task:

- Scroll down the list of tasks to "Move Tactically" using the sliding bar on the right side of the "Available Behaviors" window.
- LC "Move Tactically" to highlight.
- LC "Create" at the bottom left of the window.

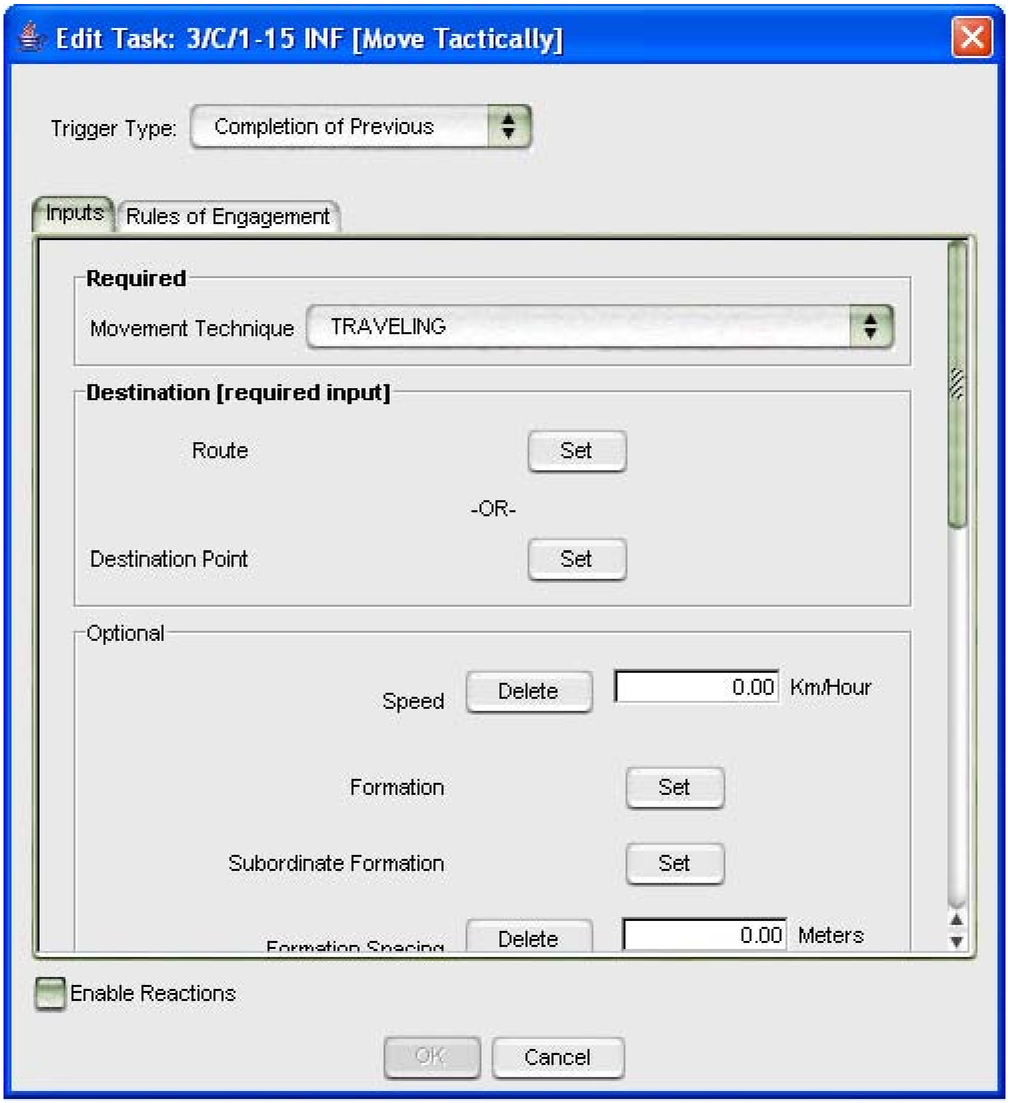

Phase 1
On Command

For certain tasks the phase heading and task will turn red until you complete inputting the parameters

The “Edit Task” window will appear. In this window you will modify the required, optional, and rules of engagement task parameters. The heading of the window lists the type of task selected and to whom it is being assigned

As shown below in the “Move Tactically” screen shot there are 4 areas that require user inputs; the “Trigger Type”, the “Inputs” and “Rules of Engagement” tabs, and the “Enable Reactions” box.

These 4 areas are common to all tasks and will be addressed in more detail starting on the next page.



Edit Task: 3/C/1-15 INF [Move Tactically]

Trigger Type: Completion of Previous

Movement Technique: TRAVELING

Speed: 0.00 Km/Hour

Formation Spacing: 0.00 Meters

Inputs
Rules of Engagement
Required
Destination [required input]
Route
Set
-OR-
Destination Point
Set
Optional
Delete
Formation
Set
Subordinate Formation
Set
Delete
☐ Enable Reactions
OK
Cancel

Which Triggers Should You Use?

The trigger parameter assists you in the sequencing of behaviors by allowing you to determine when an event happens. The four trigger options available are “At Time”, “Completion of Previous (default for Tasks)”, “On Command (default for Phases)”, and “Phase Line Crossed. The 2 triggers used the most in building a simple scenario are “On Command” and “Completion of Previous” these 2 triggers are explained below.

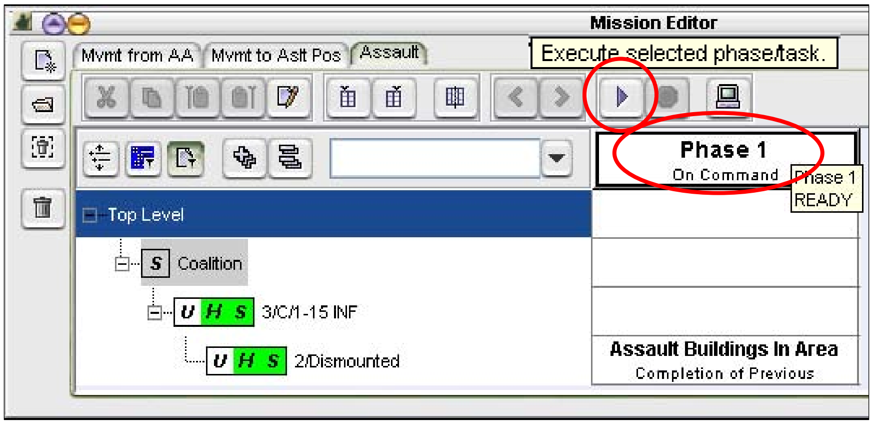
On Command Trigger

The “On Command” trigger can be used when initially developing the scenario allowing the user to control when an event happens. This gives the user the advantage of seeing each event and determining whether or not the right task has been assigned based on the outcome. The disadvantage to this trigger is the user has to initiate all tasks that have this trigger applied.

Using this trigger is highly recommended when you are developing the scenario and debugging it.

No actions are necessary to apply this trigger to a phase because it is the default trigger; however, once the scenario has been initialized and run, the user is required to activate the trigger by;

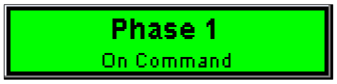
- LC on the “Phase” or “Task” to execute
- LC on the “Execute selected phase/task” button

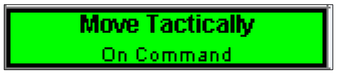

Mission Editor
Mvmt from AA
Mvmt to Aslt Pos
Assault
Execute selected phase/task.
Phase 1
On Command
Phase 1
READY
Top Level
S Coalition
U H S 3/C/1-15 INF
U H S 2/Dismounted
Assault Buildings In Area
Completion of Previous

All “on Command triggers must be “Run” or the scenario/task will not start.

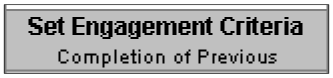
4. Creating a Basic Scenario – Which Triggers Should You Use? – On Command

Once you execute the selected phase or task, the phase or task box will change colors. Below is an explanation of each color.

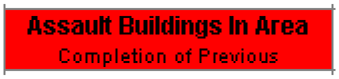

Phase 1
On Command


Move Tactically
On Command

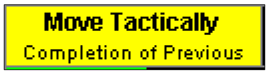
The Phase/Task selected will turn green indicating that the Phase/Task is being executed.


Set Engagement Criteria
Completion of Previous

The task will turn grey once the task is complete


Assault Buildings In Area
Completion of Previous

The task will turn red if one of the parameters is wrong


Move Tactically
Completion of Previous

The task will turn yellow if it has been suspended

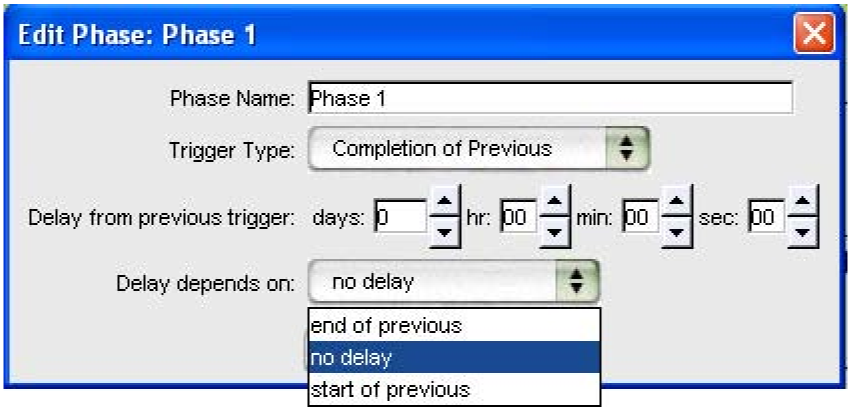
Completion of Previous Trigger

The “Completion of Previous” trigger can be used when a seamless execution of phases and tasks is required. This usually will happen after the scenario has been constructed and proofed using the “On Command” trigger. The “Completion of Previous” trigger has the advantage of allowing the user to enter one execution command and then sit back and watch the scenario execute. The disadvantage to this is that all tasks are executed in the planned sequence or even simultaneously which does not allow the user to observe each individual task.

The “Completion of Previous” trigger can be set for both tasks and phases; however, NO action is necessary to set the trigger for a task because it is the default trigger and no delays can be inputted.

Setting the trigger for a phase involves different steps than setting it for a task. To set the trigger for the phase;

- **RC the phase heading**
- **Mouse over “Edit” and LC**
- **LC the drop down menu arrows in the box next to “Trigger Type”**
- **Mouse over “Completion of Previous” and LC**
- **Input time delay using the up and down arrows next to days/hr/min/sec**
- **LC the drop arrows next to “Delay depends on, Mouse over choice and LC**



Edit Phase: Phase 1

Phase Name: Phase 1

Trigger Type: Completion of Previous

Delay from previous trigger: days: 0 hr: 00 min: 00 sec: 00

Delay depends on: no delay

The remaining triggers are described in more detail in Appendix D.

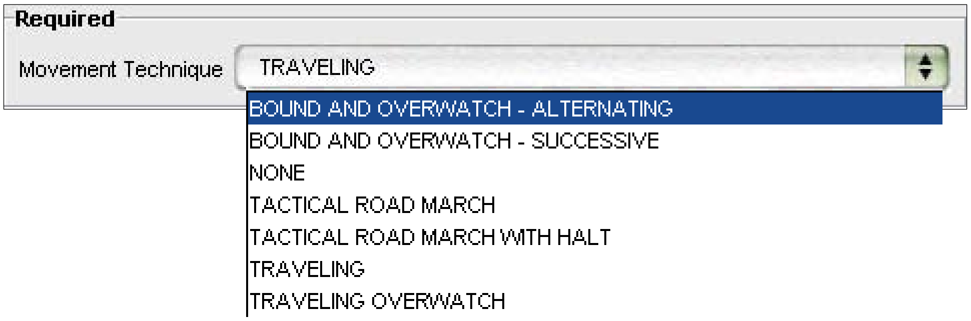
Inputs Tab

The next areas requiring user input are the “Required”, “Destination”, and “Optional” sections of the Input Tab. The “moving tactically” behavior is used again to present and describe the required procedures.

Required Section

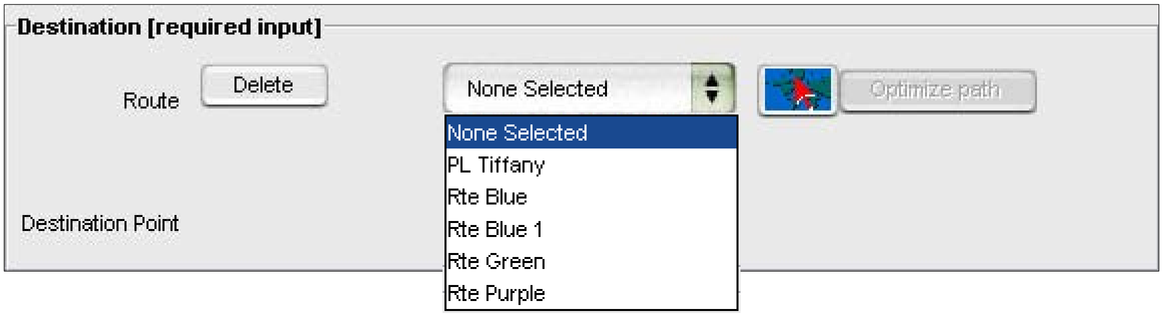
The “Required” section gives you the option of selecting a movement technique from the displayed list of techniques.

- LC the drop down arrows
- Mouse over and LC to select


Required
Movement Technique
TRAVELING
BOUND AND OVERWATCH - ALTERNATING
BOUND AND OVERWATCH - SUCCESSIVE
NONE
TACTICAL ROAD MARCH
TACTICAL ROAD MARCH WITH HALT
TRAVELING
TRAVELING OVERWATCH

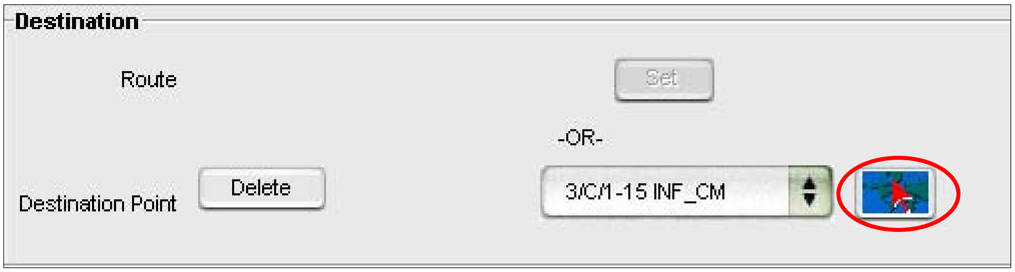
Destination Section

The “Destination” section gives you 2 different options of selecting the method to move units, “Route” and “Destination Point”. You must choose one or the other; you cannot choose both methods for one task. The first option, “Route”, requires a previously drawn and named “Route” control measure (see the ‘Place Control Measure on a Map’ section). When you select “route”, all the names of the routes you previously generated under the palette function (graphic control measures) will automatically show on the drop-down list. By selecting “Set” next to route or destination point, you are choosing that method of selecting a destination. By selecting “Delete” next to route or destination point, you are de-selecting that method.

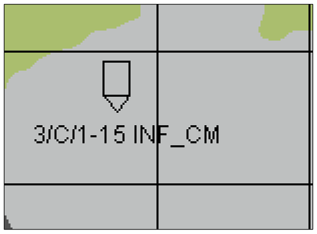

Destination [required input]
Route
Delete
None Selected
Optimize path
None Selected
PL Tiffany
Rte Blue
Rte Blue 1
Rte Green
Rte Purple
Destination Point

- LC “Set”
- LC drop down arrows next to “None Selected”
- Mouse over appropriate route and LC

To use the “Destination Point” method



- LC “Set”
- LC the red arrow (point-and-click) next to the drop down menu
- LC the PVD screen (Map) where you want the “Destination Point” to be



The map and drop down menu will populate with the destination point selected. In this example the system named the destination action point control measure 3/C/1-15 INF_CM

If you have pre-drawn point control measures they will appear in the drop-down list as available destination points and can be selected instead of using the red arrow method to assign a destination point.

You cannot use both methods to control the movement of the unit/entity

If you select the destination point method the entity or unit will move directly to the destination point. If there are obstacles in the way, the entity/unit will stop and never reach its destination.

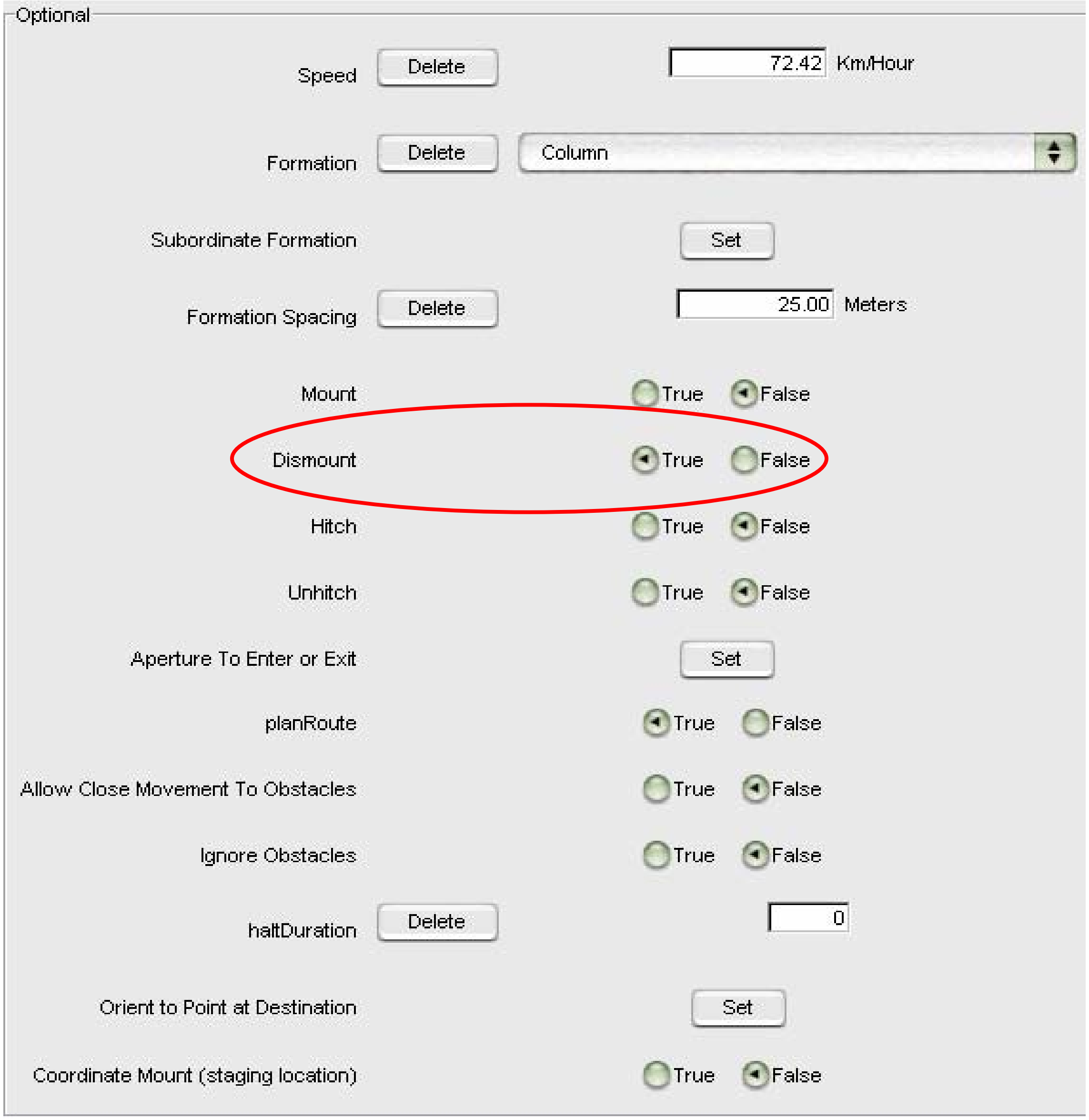
4. Creating a Basic Scenario – Inputs Tab

Optional Section

You should consider this section as required more than optional. There are certain parameters in different behaviors that if not addressed will cause the behavior to stall; for example in the Move Tactically behavior below, if you did not specify a speed for the vehicles the behavior would stall with the vehicles not moving.

The optional section is where you will input the most parameters to control the movement of the entity/unit. You can associate these parameters with the collective tasks' implied tasks. Failure to edit the parameters might not prevent the task being accomplished; however, the outcome might not be what was expected.

The first 4 parameters are self-explanatory. The "True"/"False" variables next to "Mount", "Dismount", "Hitch", and "Unhitch" trigger the Entities or equipment to perform that action upon completion of the overall task (in this example we are telling the Soldiers in the back of the vehicles to "Dismount" at the completion of the tactical movement by 3/C/1-15 INF).



Optional

Speed Delete 72.42 Km/Hour

Formation Delete Column

Subordinate Formation Set

Formation Spacing Delete 25.00 Meters

Mount ○ True ● False

Dismount ● True ○ False

Hitch ○ True ● False

Unhitch ○ True ● False

Aperture To Enter or Exit Set

planRoute ● True ○ False

Allow Close Movement To Obstacles ○ True ● False

Ignore Obstacles ○ True ● False

haltDuration Delete 0

Orient to Point at Destination Set

Coordinate Mount (staging location) ○ True ● False

4. Creating a Basic Scenario – Inputs Tab

The “True/False” variables next to “plan route”, “allow close movement to obstacles”, and ignore obstacles” trigger the entity or unit to perform those actions during the execution of the task.

The “halt duration” allows you to input a set time you want the entity/unit to halt at the end of the task before continuing with the next task.

The “orient point at destination” gives you the option of changing the entity/units orientation from the direction of travel to another direction.

The “True/False” variables next to “coordinate mount” should remain “False”. The purpose of this parameter is unknown at this time.

The “Set” and “Delete” keys allow you to change each parameter; they are similar to ON/OFF switches. All parameters for this tactical movement are selected at the user’s discretion and preference for the task outcome.

If you are selecting a route, it must already exist on the PVD screen as a control measure.

The speed and spacing can be changed from MPH to KPH and KM to Miles using the preferences lesson in Chapter 3

Rules of Engagement Tab

The “Rules of Engagement” (ROE) tab sets the parameters for engagement criteria for the assigned unit. Using the “Default ROE” gives you access to only the default tab. This tab allows you to select the “Weapons Control Status (WCS)” and “Mission Priorities” from pre-populated drop down menus. Selection of “Free Fire Areas”, “Free Fire Lines”, “No Fire Areas” and “Restrictive Fire Lines” requires you to pre-draw the appropriate control measure on the PVD screen in order to populate a drop down menu to select from.

When you run the scenario the entities/units start to move towards each other. When they become visible to each other and are within the weapons effective range, each one will begin to engage based on the weapons control status you assigned them. OneSAF has 4 weapons control statuses available. These statuses define the engagement criteria based on the side relationships “Hostile”, “Friendly”, “Neutral”, and “Unknown”. The 4 weapons control statuses are “Free”, “Hold”, “Stop”, and “Tight”.

- *Free* is equivalent to “shoot on sight”, and allows the ordered element to fire at any perceived target.

- *Hold* is the “hold your fire” option, where entities will not fire weapons unless fired upon.

- *Stop* is the most restrictive WCS option, and means the entity or unit cannot fire under any circumstances.

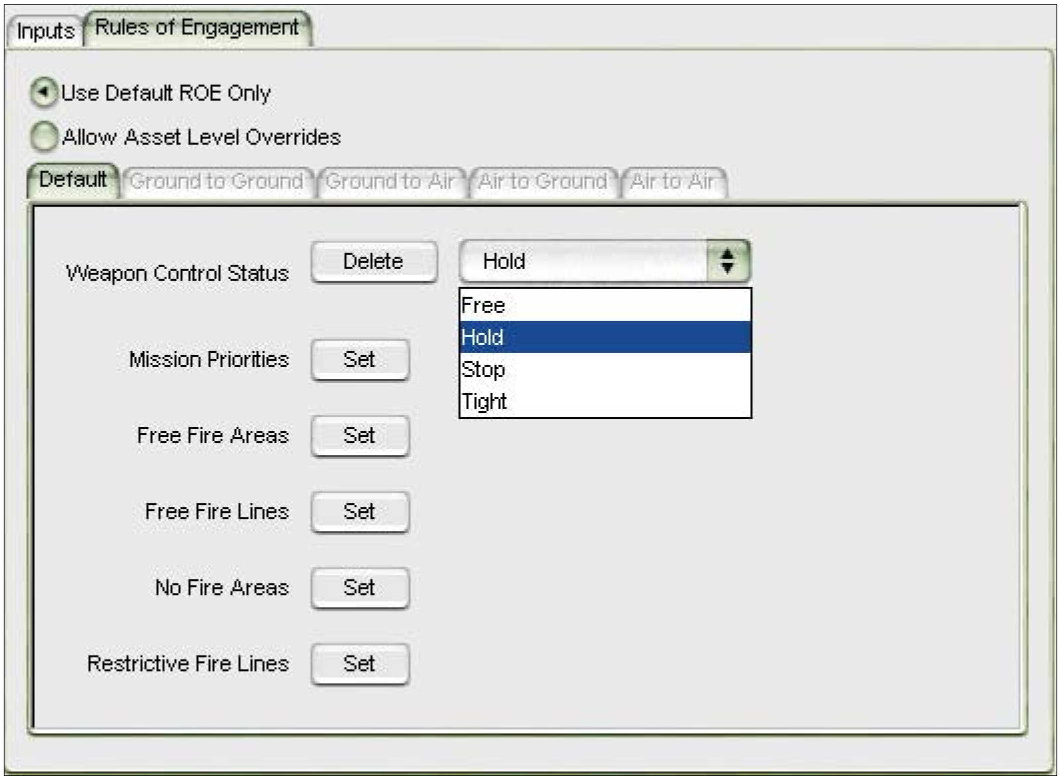
- *Tight* control allows the entity or unit to fire upon enemy targets, but only after they have been fully identified.

The ROE tab also allows you to select “Mission Priorities” for the engagement criteria. The selection available on the drop down menu allows you to choose either personnel or equipment as a priority engagement.

4. Creating a Basic Scenario – Rules of Engagement Tab

To select either the Weapons Control Status or Mission priority

- **LC "Set"**
- **LC the drop-down menu**
- **Mouse over desired weapon control status or mission priority and LC.**


Inputs
Rules of Engagement
Default
Ground to Ground
Ground to Air
Air to Ground
Air to Air
Delete
Set
Free
Hold
Stop
Tight

● Use Default ROE Only
○ Allow Asset Level Overrides

Weapon Control Status: Hold

Mission Priorities

Free Fire Areas

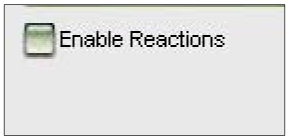
Free Fire Lines

No Fire Areas

Restrictive Fire Lines

The Fire Support Coordination measures must be drawn using the Create Palette before you can select one in the ROE Tab.

Enable Reactions


☐ Enable Reactions

The "Enable Reactions" box, once checked, allows the entity or unit to react to contact with the other elements of the scenario. Leaving the button unchecked will cause the entities or units to be oblivious to the other elements. The default setting is unchecked.

More behaviors can be found in Chapter 5.

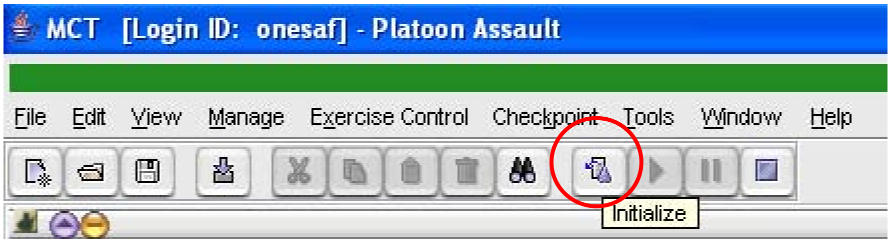
Run a Scenario

Running a scenario involves 2 processes; first, you must initialize the scenario, and second, you must run the scenario. This section covers both processes.

WARNING: Before initializing any scenario ensure that the scenario is saved or you will lose your last changes.

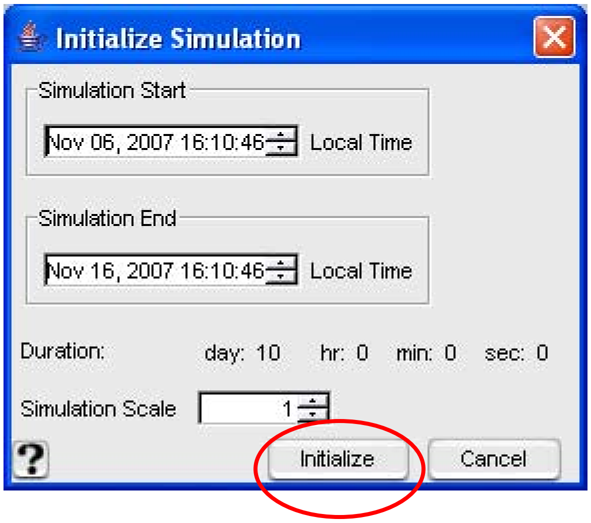
To initialize the scenario you will use the MCT toolbar.
First save the latest changes to your scenario.
Then:

- **LC the "Initialize" button.**


MCT [Login ID: onesaf] - Platoon Assault
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
Initialize

The "Initialize Simulation" pop-up window gives you the options of modifying the start and end time of the simulation (not normally used in the stand alone mode), or increasing the simulation scale to run the scenario at faster than normal speed (can be used to move quickly through the movement phase and get to the actions on the objective phase. i.e. 1= normal simulation time, 10 = 10 times the normal simulation time). Make any changes necessary and;

- **LC the "Initialize" button.**


Initialize Simulation
Initialize
Cancel

Simulation Start
Nov 06, 2007 16:10:46 Local Time

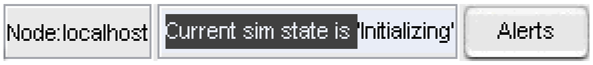
Simulation End
Nov 16, 2007 16:10:46 Local Time

Duration: day: 10 hr: 0 min: 0 sec: 0

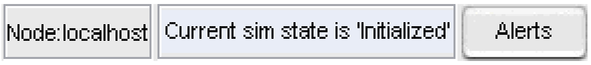
Simulation Scale 1

4. Creating a Basic Scenario – Run a Scenario

The system will process the initialization input and display the information at the bottom right of the MCT window.

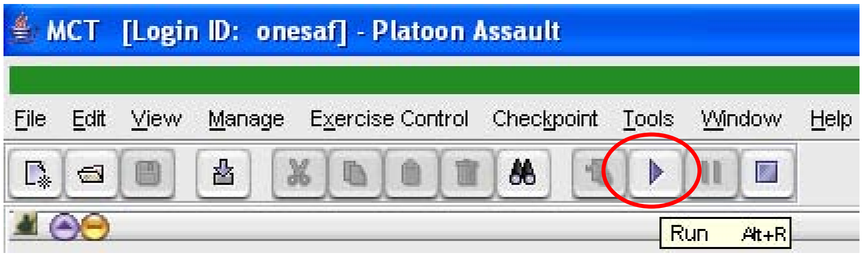

Node:localhost | Current sim state is 'Initializing' | Alerts

The shading on the screen will increase from left to right as the process nears completion. When complete the verbiage will change to “Current sim state is ‘initialized’”.

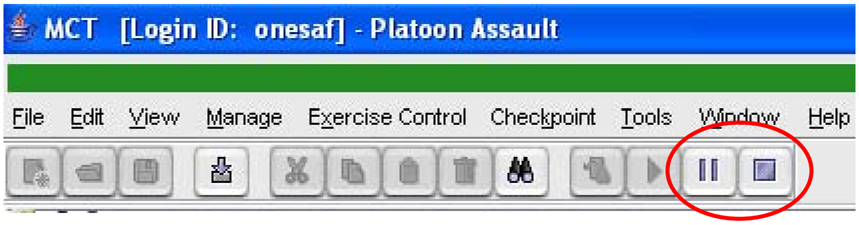

Node:localhost | Current sim state is 'Initialized' | Alerts

When the system has completed initializing, the “Run” button on the MCT toolbar is activated.

- LC the “Run” button.


MCT [Login ID: onesaf] - Platoon Assault
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
Run Alt+R

LC’ing the “Run” button runs the scenario at the MCT level and activates the “Pause” and “Stop” buttons for future use.


MCT [Login ID: onesaf] - Platoon Assault
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help

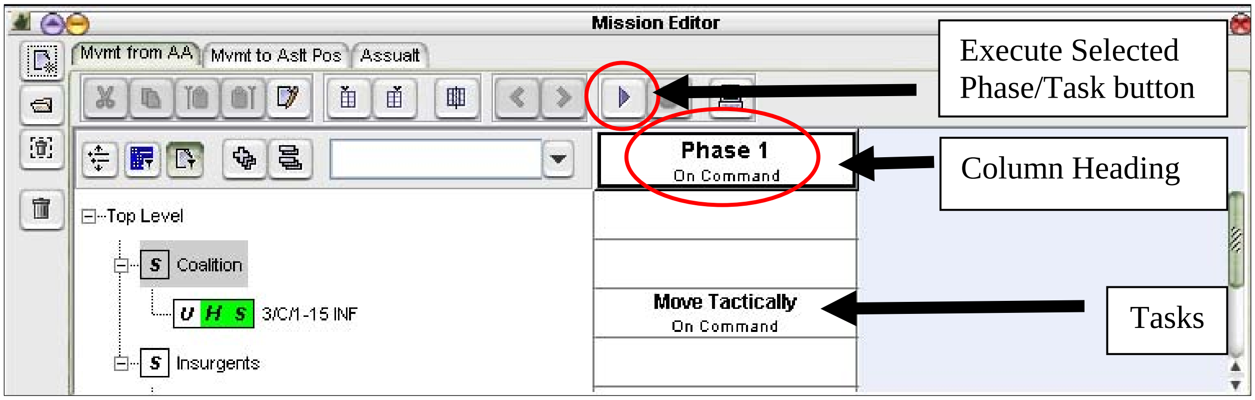
4. Creating a Basic Scenario – Run a Scenario

The next step is to execute the scenario in the Mission Editor. If the phase heading triggers are set to "On Command" then you must;

- LC the column heading (Phase 1)
- LC the "Execute Selected Phase/Task" button.

If there are any "Task" triggers set to "On Command" then you must;

- LC the "Task" (Move Tactically)
- LC the "Execute Selected Phase/Task" button


Mission Editor
Mvmt from AA
Mvmt to Aslt Pos
Assualt
Phase 1
On Command
Top Level
Coalition
3/C/1-15 INF
Insurgents
Move Tactically
On Command
Execute Selected Phase/Task button
Column Heading
Tasks

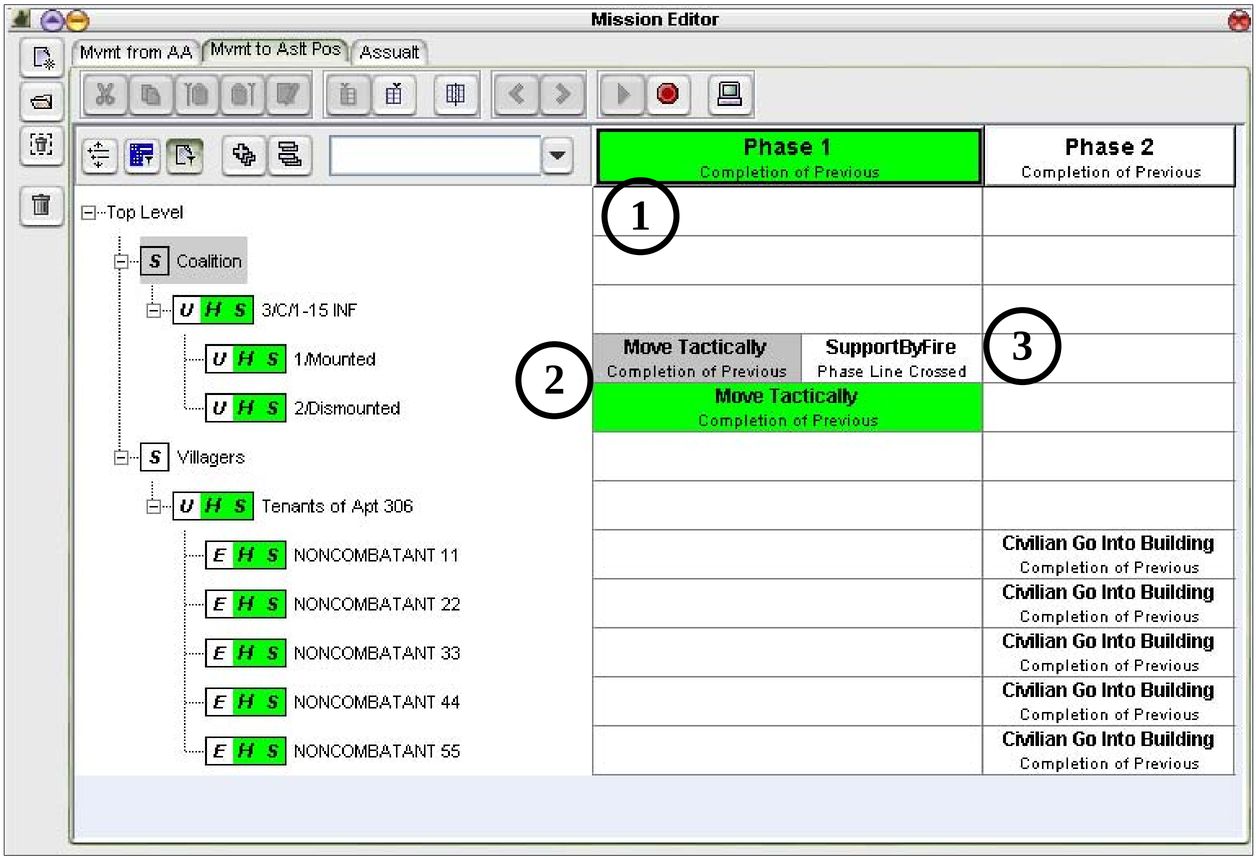
If the column headings and task triggers are set to completion of previous, then once you LC the run button on the MCT toolbar the mission editor will automatically execute.

There are 3-4 processes that will happen once you select the “Execute Selected Phase/Task” button.

① First, the column heading will change color to green indicating the phase is being executed.

② Second, any behaviors with a “Completion of Previous (CP)” trigger will automatically execute, once complete they will change color to grey.

③ Third, any behaviors with the “At Time”, “Phase Line Crossed”, or “On Command” triggers will be displayed with a white background indicating they are in the ready mode and ready to execute.



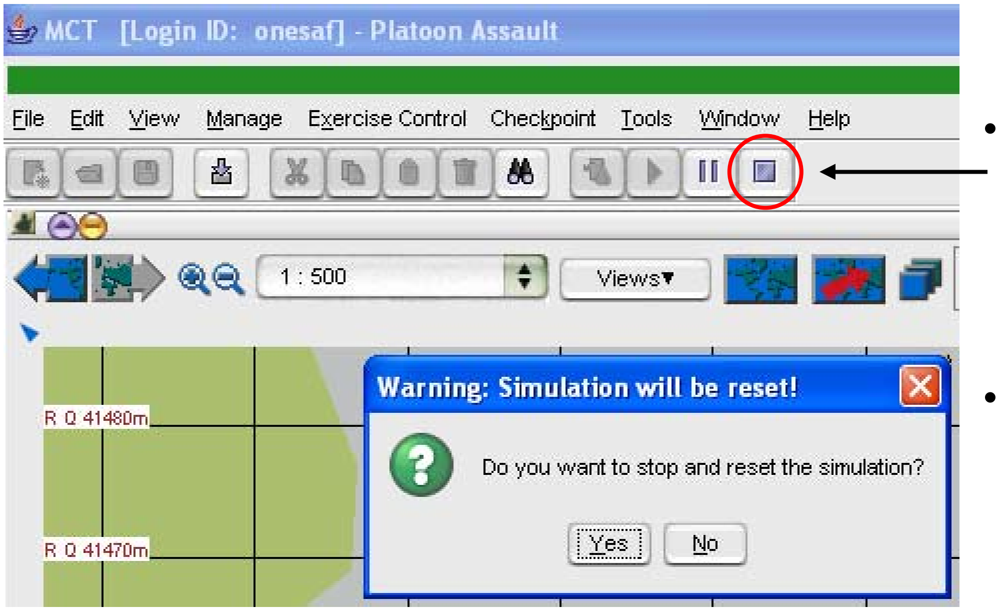
	Phase 1 Completion of Previous		Phase 2 Completion of Previous
Top Level			
S Coalition			
U H S 3/C/1-15 INF			
U H S 1/Mounted	Move Tactically Completion of Previous	SupportByFire Phase Line Crossed	
U H S 2/Dismounted	Move Tactically Completion of Previous		
S Villagers			
U H S Tenants of Apt 306			
E H S NONCOMBATANT 11			Civilian Go Into Building Completion of Previous
E H S NONCOMBATANT 22			Civilian Go Into Building Completion of Previous
E H S NONCOMBATANT 33			Civilian Go Into Building Completion of Previous
E H S NONCOMBATANT 44			Civilian Go Into Building Completion of Previous
E H S NONCOMBATANT 55			Civilian Go Into Building Completion of Previous

The scenario will continue to run until completion of the last task. If at any time the task, phase or table headings turn red then the scenario will stop at that point. To assist you in determining what is wrong you can mouse over the red box until an error pop-up window appears. This window will have a brief explanation of the error, but not what to do to fix it. The other method is to LC on the “Alert” button located at the bottom right hand corner of the MCT window.

Stopping and Resetting a Scenario

At the completion of the simulation it is necessary to stop and reset the scenario prior to restarting the same scenario or loading a different one. Once stopped, the scenario resorts to the last saved version, this is why it is imperative to save the scenario before you initialize it.

To stop and reset the scenario

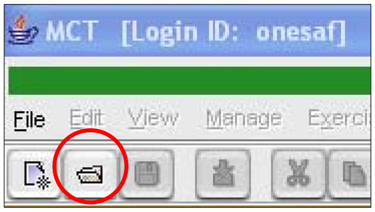

MCT [Login ID: onesaf] - Platoon Assault
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
1 : 500
Views▾
R Q 41480m
R Q 41470m
Warning: Simulation will be reset!
Yes
No

Do you want to stop and reset the simulation?

- **LC the stop button.**
- **LC the “Yes” button in the pop-up window.**

To reload a scenario

- **LC on the “Open an existing simulation button”.**

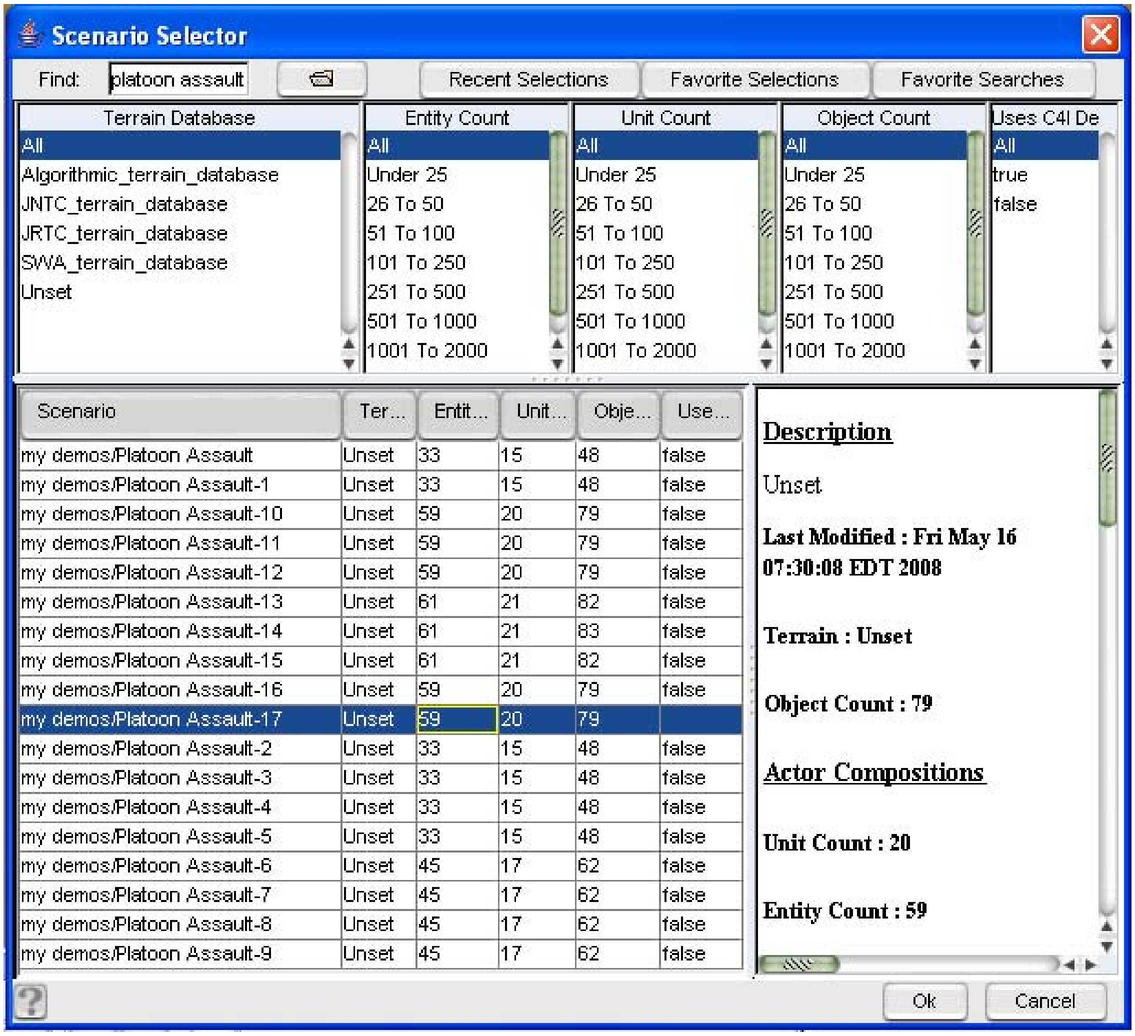

MCT [Login ID: onesaf]
File
Edit
View
Manage
Exerci

The “Scenario Selector” pop-up window will appear with a list of all the saved scenarios currently in the repository database.

To select a scenario

If each scenario you develop has a unique name you can filter out all other scenarios selections by typing the name of the scenario into the “Find” box. The list of scenarios that appears is the multiple saved version of the original scenario. The most current version is the scenario with the highest number. In this example “my demos/Platoon Assault-17 is the most current version (or last version saved). Every time you save the scenario the system will add another version to the overall scenario file.

- Type scenario name into the “Find” box
- Hit the “Enter” key on your keyboard (the system filters the list to only those scenarios with the keys words entered in the “Find” box)
- LC, drag, and release the right side of the scenario column to expand the column width.
- LC and highlight the scenario desired.
- LC the “Ok” button in the lower right corner of the window.


Scenario Selector
Find:
platoon assault
Recent Selections
Favorite Selections
Favorite Searches
Terrain Database
All
Algorithmic_terrain_database
JNTC_terrain_database
JRTC_terrain_database
SWA_terrain_database
Unset
Entity Count
All
Under 25
26 To 50
51 To 100
101 To 250
251 To 500
501 To 1000
1001 To 2000
Unit Count
All
Under 25
26 To 50
51 To 100
101 To 250
251 To 500
501 To 1000
1001 To 2000
Object Count
All
Under 25
26 To 50
51 To 100
101 To 250
251 To 500
501 To 1000
1001 To 2000
Uses C4I De
All
true
false
Ok
Cancel

Scenario	Ter...	Entit...	Unit...	Obje...	Use...
my demos/Platoon Assault	Unset	33	15	48	false
my demos/Platoon Assault-1	Unset	33	15	48	false
my demos/Platoon Assault-10	Unset	59	20	79	false
my demos/Platoon Assault-11	Unset	59	20	79	false
my demos/Platoon Assault-12	Unset	59	20	79	false
my demos/Platoon Assault-13	Unset	61	21	82	false
my demos/Platoon Assault-14	Unset	61	21	83	false
my demos/Platoon Assault-15	Unset	61	21	82	false
my demos/Platoon Assault-16	Unset	59	20	79	false
my demos/Platoon Assault-17	Unset	59	20	79	
my demos/Platoon Assault-2	Unset	33	15	48	false
my demos/Platoon Assault-3	Unset	33	15	48	false
my demos/Platoon Assault-4	Unset	33	15	48	false
my demos/Platoon Assault-5	Unset	33	15	48	false
my demos/Platoon Assault-6	Unset	45	17	62	false
my demos/Platoon Assault-7	Unset	45	17	62	false
my demos/Platoon Assault-8	Unset	45	17	62	false
my demos/Platoon Assault-9	Unset	45	17	62	false

Description

Unset

Last Modified : Fri May 16 07:30:08 EDT 2008

Terrain : Unset

Object Count : 79

Actor Compositions

Unit Count : 20

Entity Count : 59

To make the filter windows adjustable move your cursor to the right side of the “Scenario Selector” window and vary the size of the whole window. The filter windows will self adjust to the size of the “Scenario Selector” window.

4. Creating a Basic Scenario – Stopping and Resetting a Scenario

The other options to select a scenario include scrolling through all of the scenarios in the repository database, or using the “Recent Selections”, or “Favorite Selections” button.

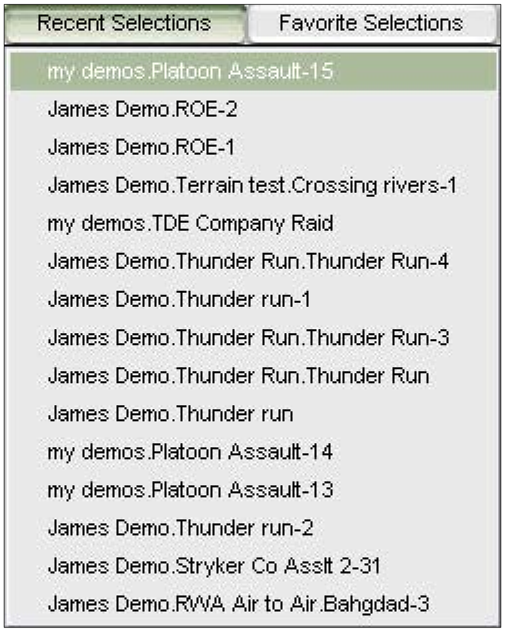
To scroll through all of the scenarios;

- LC and hold the scroll bar located between the “Uses C4I Device” column and the “Description” box.

To use the “Recent Selections” button;

- LC the “Recent Selections” button
- Mouse over the scenario
- LC the scenario

Take note here. The most recently selected scenario might not be the most current version saved. Double check before selecting, changing, and saving the scenario and overriding any previous work.



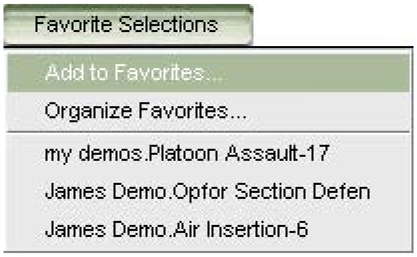
my demos.Platoon Assault-15
James Demo.ROE-2
James Demo.ROE-1
James Demo.Terrain test.Crossing rivers-1
my demos.TDE Company Raid
James Demo.Thunder Run.Thunder Run-4
James Demo.Thunder run-1
James Demo.Thunder Run.Thunder Run-3
James Demo.Thunder Run.Thunder Run
James Demo.Thunder run
my demos.Platoon Assault-14
my demos.Platoon Assault-13
James Demo.Thunder run-2
James Demo.Stryker Co Asslt 2-31
James Demo.RWA Air to Air.Bahgdad-3

To use the “Favorite Selections” button you must first add the scenario to the “Favorite Selections” list;

- LC the scenario in the “Scenario Selector” window that you want to add
- LC the “Favorite Selections” button
- LC “Add to Favorites”

To use the “Favorite Selections” button

- LC the “Favorite Selections” button
- Mouse over the scenario
- LC the scenario



my demos.Platoon Assault-17
James Demo.Opfor Section Defen
James Demo.Air Insertion-6

Again, take note, the scenario in the favorite selections might not be the most current scenario. The list of favorite selections will not automatically update when you develop a new version and save it.

Behaviors

OneSAF Behaviors are a series of commands that control the actions of Entities and Units. The list of behaviors available for each Entity and Unit is based on their size and side relationship. Behaviors cross sides and can be available for assignment to Hostile, Friendly, Neutral, or Unknown sides. Before assigning a behavior to a friendly or enemy unit you must draw the required control measures.

Behavior Common Parameters

A set of common parameters are in every behavior window. Though common, they vary somewhat in their relevance to different entities and units. For example, the Weapon Control Status Summary matters to a tank platoon, but is meaningless to an unarmed non-combatant.

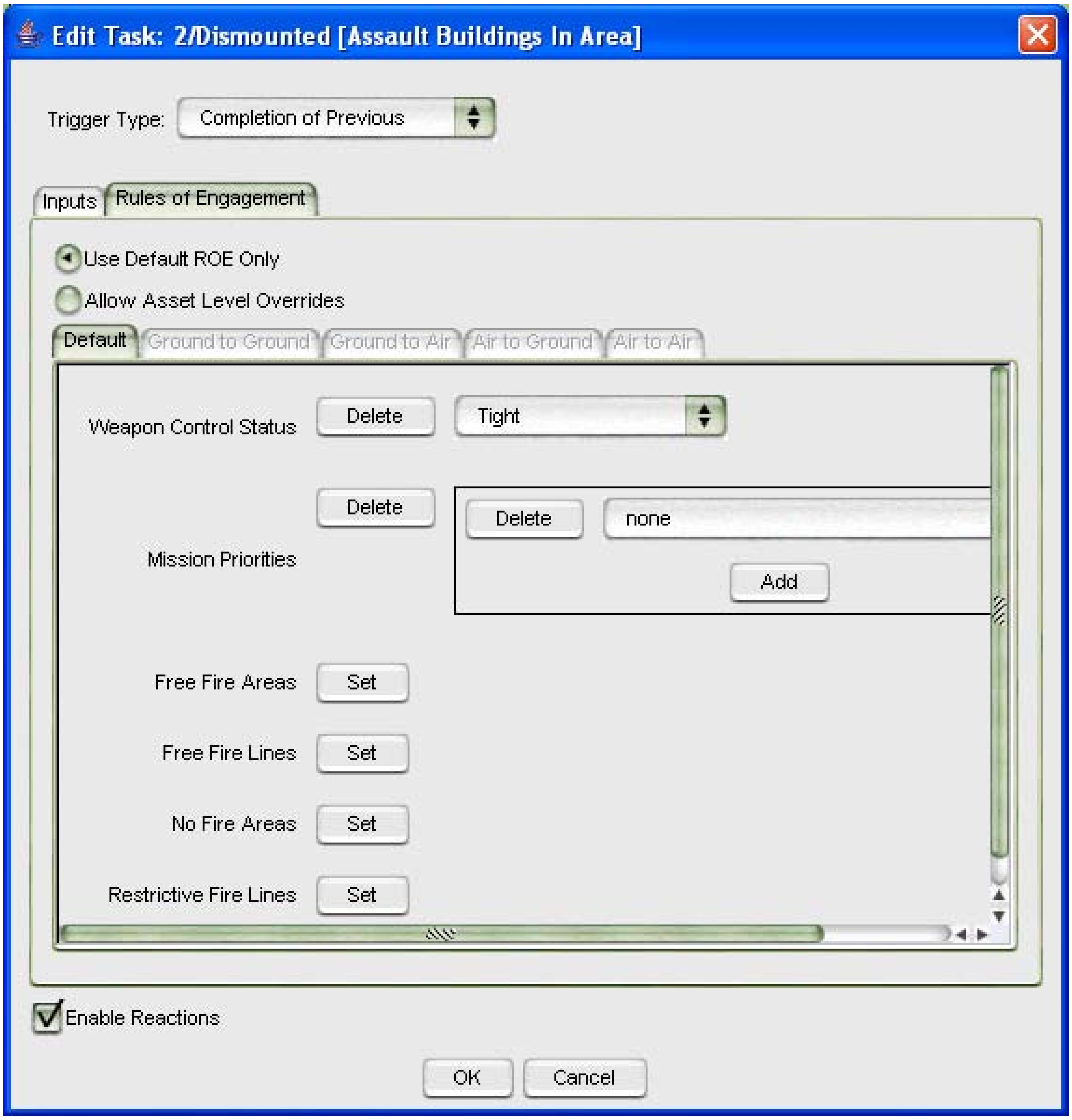
Trigger Type

The set of available Trigger choices is the same for all behaviors; it defines the event or action that causes the given behavior to execute. Trigger has one of four values:

> *At Time* allows operator input of a specific simulation time when the behavior will be executed.
>
> *Completion of Previous* causes the behavior to execute as soon as the prior behavior finishes. If the given behavior is the first one, it will execute immediately upon the start of simulation.
>
> *On Command* provides the operator with the capability to set up a behavior so it can only be executed manually.
>
> *Phase Line Crossed* is a trigger that activates the behavior when a Phase Line control measure is crossed.

Rule of Engagement Tab

The Rules of Engagement (ROE) tab is available on every behavior. The element's ROE provides the operator with the capability to influence which targets the entity or unit will fire upon. Note that ROE settings can override expected actions of the associated behavior. For example, an armored personnel carrier transporting wounded Soldiers will fire at applicable targets if the ROE is set to Free for that case.



Edit Task: 2/Dismounted [Assault Buildings In Area]

Trigger Type: Completion of Previous

● Use Default ROE Only

○ Allow Asset Level Overrides

Weapon Control Status: Tight

Mission Priorities: none

☑ Enable Reactions

Inputs
Rules of Engagement
Default
Ground to Ground
Ground to Air
Air to Ground
Air to Air
Delete
Delete
Delete
Add
Free Fire Areas
Set
Free Fire Lines
Set
No Fire Areas
Set
Restrictive Fire Lines
Set
OK
Cancel

5. Behaviors

Below the Trigger Type pull-down menu, there is a set of buttons designed to influence the general Rules of Engagement (Ground and Air, shooters and targets) for the element. These buttons currently have no effect on the Mount/Dismount behavior. If the Allow Asset Level Overrides button is selected on the Rules of Engagement tab, these ROE buttons become active on the GUI. But again, selecting them will have no effect on the simulation. If more detailed control of targets is desired, see the Rules of Engagements Inputs section below.

Use Default ROE Only / Allow Asset Level Overrides

The Use Default ROE Only and Allow Asset Level Overrides buttons currently have no effect on the Mount/Dismount behavior. Selection of one button or the other does affect available GUI options; clicking on the Allow Asset Level Overrides button makes the Ground Assets and Air Assets tabs available, but their inputs are ignored by the entities/units.

Default ROE / Ground Assets / Air Assets

The options on the Default ROE tab are always available, and the Ground Assets and Air Assets parameters are active only if the Allow Asset Level Overrides button is selected. However, Ground Assets and Air Assets input data currently has no effect. The Default ROE tab defines the threat rules that will apply to all potential shooters and targets. Options on the Default ROE tab are detailed below.

Weapon Control Status Summary

The Default Weapons Control Status (WCS) allows for a general weapons control setting for the entity or unit, enforced when no other WCS settings apply. The four choices are:

> *Free* is equivalent to “shoot on sight”, and allows the element to fire at any perceived target.
>
> *Hold* is the “hold your fire” option, where entities will not fire weapons unless fired upon.
>
> *Stop* is the most restrictive WCS option, and means the entity or unit cannot fire under any circumstances.
>
> *Tight* control allows the entity or unit to fire upon enemy targets, but only after they have been fully identified.

Mission Priorities

The Mission Priorities selection allows the MCT operator to specify particular target types, in behavior of interest; a large number of target types are available for selection. For example, if the operator selects “aviation” and then “infantryFightingVehicle”, the element will target aircraft (A/C) and then IFVs and then other enemy targets in that behavior.

5. Behaviors

Free Fire Areas

The Free Fire Areas button provides the operator with the capability to add Area Control Measures to the unit/entity's ROE settings. Applicable target entities that pass through the Area can be fired upon as if the WCS status were set to Free, regardless of the actual WCS setting.

Free Fire Lines

The Free Fire Lines button provides the operator with the capability to add Line Control Measures to the unit/entity's ROE settings. Applicable target entities that pass by on the other side of the Line can be fired upon as if the WCS status were set to Free, regardless of the actual WCS setting.

No Fire Areas

The No Fire Areas button provides the operator with the capability to add Area Control Measures to the unit/entity's ROE settings. Applicable target entities that pass through the Area cannot be fired upon, regardless of the current WCS setting.

Restrictive Fire Lines

The Restrictive Fire Lines button provides the operator with the capability to add Line Control Measures to the unit/entity's ROE settings. Applicable target entities that pass by on the other side of the Line cannot be fired upon, regardless of the current WCS setting.

Enable Reactions

Check the Enable Reactions task box to activate the given behavior's reactive behaviors; if the box is cleared, the behavior will run without reacting to outside interference (e.g. enemy fire). If the box is checked for Mount/Dismount, subunits will react to incoming fire by performing a React to Enemy Indirect Fire While Stationary.

Assigning Behaviors

In chapter 4 - Assigning Behaviors to Entities and Units, specific instruction were given on how to select the behavior, modify the parameters, and assign it to an entity or unit. This chapter lays out examples of commonly used behaviors at the entity and unit level. Not all of the behaviors available will be covered either because they are currently incomplete, or they are simple enough to understand and apply with the basic knowledge imparted in Chapter 4.

Each behavior will be discussed in the same format. First, will be a brief description of the primary purpose of the behavior. Second, a discussion of the various parameters that influences the outcome of the behavior and a list of the required graphic control measures that must be present prior to assigning the behavior. Next, an explanation of the required and optional parameters with screen shots showing actual parameter selection. Lastly, an example, using screen shots, of the completed behavior.

Unit level behaviors are covered first, then Entity. These behaviors are filtered by echelon; for example, a Platoon sized element can perform the behavior "Assault Buildings in Area", however, a

5. Behaviors

Squad can only perform “Assault Building”. The lists of behaviors that appear in “Create Task” pop-up window are the only behaviors that each size element can perform.

The commonly used Unit and Entity behaviors are listed below. These behaviors are described in more detail in the following pages. The elements in parenthesis are the size elements that can complete the task. In keeping with the focus of the user guide, no element above Company was explored.

Unit behaviors

- Assault Building (Fire Team, Squad, Platoon, Company)
- Assault Buildings in Area (Platoon, Company)
- Attack by Fire (Fire Team, Squad, Platoon, Company)
- Clear Room (Fire Team)
- Conduct Checkpoint (Squad, Platoon, Company)
- Conduct Raid (Platoon, Company)
- Emplace Minefield (Platoon, Company)
- Issue Fire Order (Section, Platoon)
- Occupy Position (Platoon, Company)
- Support by Fire (Fire Team, Squad, Platoon, Company)

Entity Behaviors

- Construct HVIED
- Detonate Self
- Disperse Randomly
- Emplace Explosives
- Hitch/Unhitch
- Mount/Dismount
- Rotary Wing Aircraft (RWA) Move Tactically
- Unmanned Aerial Vehicle (UAV) Conduct Surveillance
- Unconventional Infiltration

Interventions

Appendix G lists the available behaviors by echelon, and friendly, hostile, non-combatant.

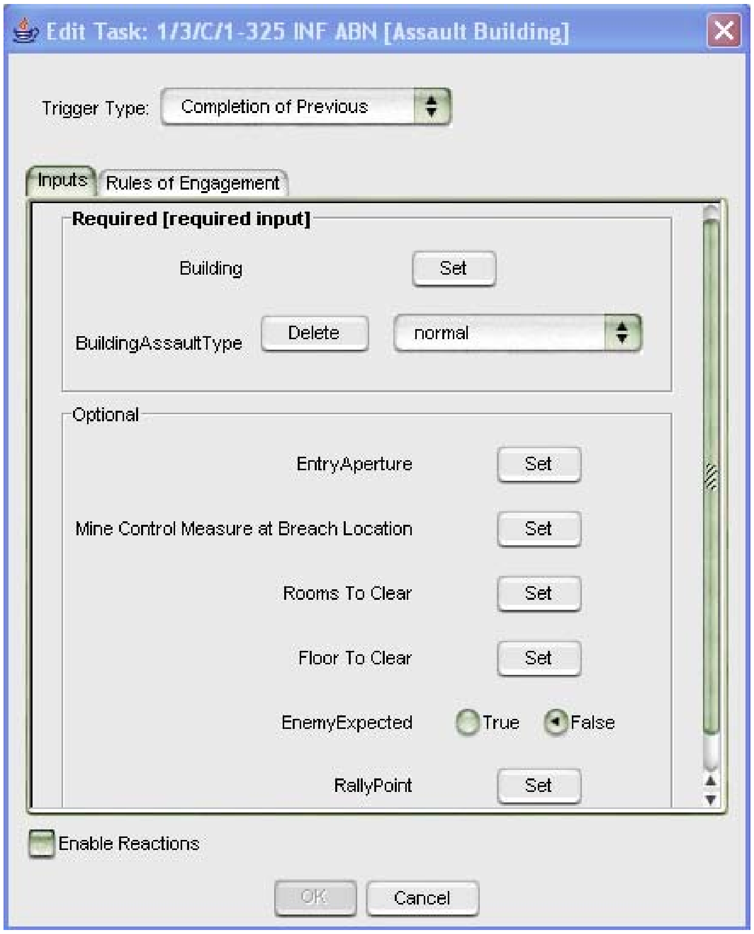
Unit Behaviors

Assault Building

Assault Building is the primary behavior to assigning Fire Team and Squad sized elements the task of assaulting and clearing a single Ultra High Resolution Buildings (UHRB). The behavior allows you to choose the UHRB to assault using a point and click method of selection. There is no need for any graphic control measures when assigning this behavior. The behavior can be assigned to any Infantry Fire Team or Squad sized unit independent of the side relationship.

Behavior Parameters

Input parameters can be used to control various aspects of the behavior, including the building to assault and the type of entry method the squad will make. Selecting a building uses a point and click method of selection. You should first ensure that you have identified a UHRB to assault (building outlined with a black line); then ensure that the building is not in a layered mode (i.e. the ground floor is visible).


Edit Task: 1/3/C/1-325 INF ABN [Assault Building]

Trigger Type: Completion of Previous

BuildingAssaultType: normal

EnemyExpected ○ True ● False

☐ Enable Reactions

Inputs
Rules of Engagement
Required [required input]
Building
Set
Delete
Optional
EntryAperture
Set
Mine Control Measure at Breach Location
Set
Rooms To Clear
Set
Floor To Clear
Set
RallyPoint
Set
OK
Cancel

There are 3 options for building assault type – normal, breach, and climb and rappel. Selecting normal requires no other inputs. Selecting breach requires you to add demolitions to a Soldiers basic load, and use an unspecified mine graphic control measure to identify the breach point. Additional inputs in the optional section are required for the breach mode – “Mine Control Measure at Breach Location”. The climb and rappel type is incomplete – the behavior finishes before any movement is made.

Required Inputs

Assault Building has two required parameters; selecting a building to assault and choosing an assault type.

Remember, “Set” and “Delete” are equivalent to ON/OFF switches

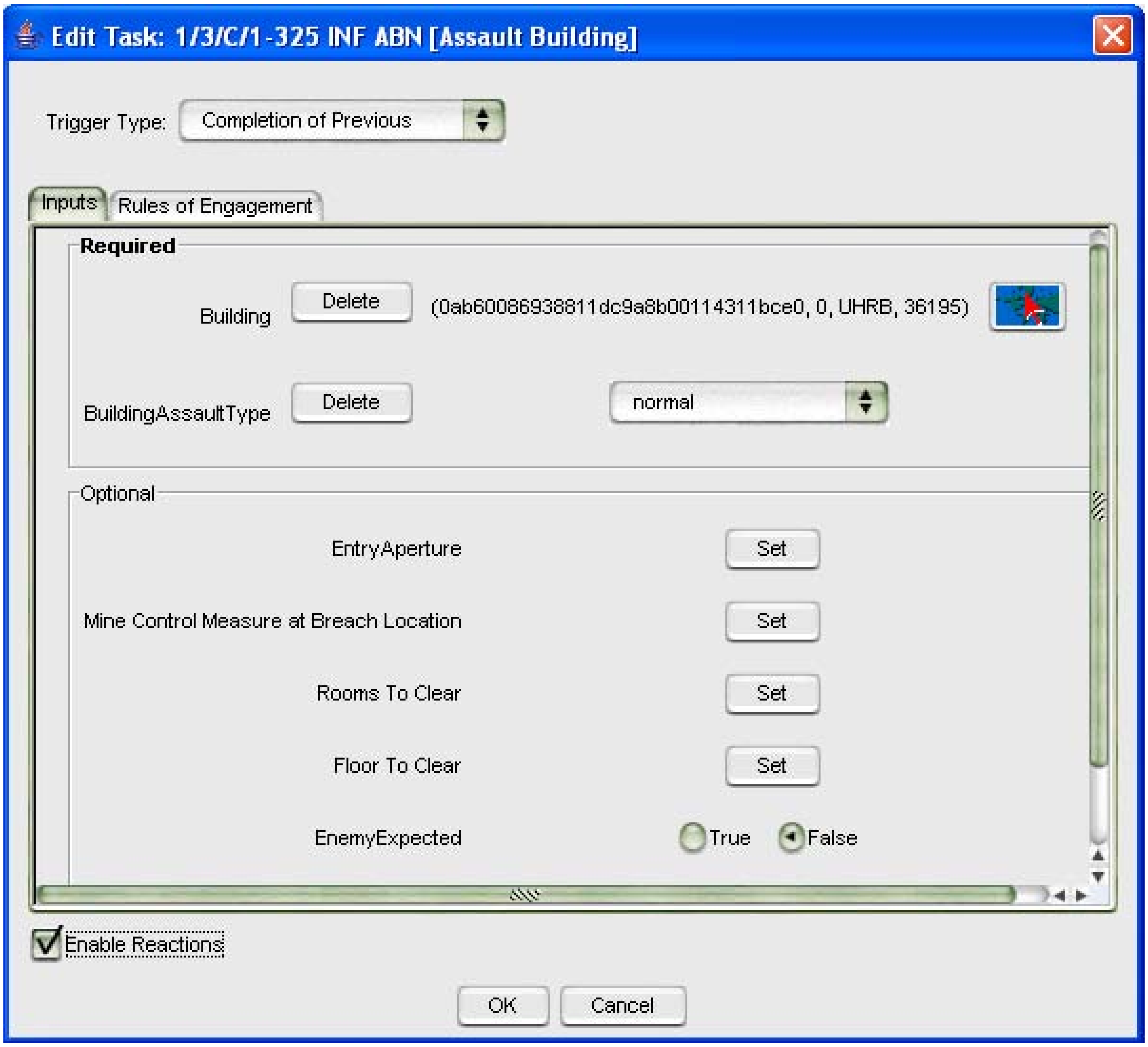
5. Behaviors

Optional Inputs

There are six optional inputs for this behavior. None of these are required for the behavior to run and be completed. The first is a point and click entry aperture that allows you to select which point you want the squad to enter the building. The second input is made from a drop down menu of available control measures, this selection is only necessary when you choose “Breach” as a building assault type. The third and fourth inputs are and click methods of choosing the specific rooms and floors to clear. The fifth input is Enemy Expected with the options of selecting True or False. This parameter triggers the unit entities to either use or not use M67 fragmentation grenades when clearing the rooms. When True is selected, the entities will throw a grenade into the room first before entering the room. They will throw this grenade no matter who is in the room, friendly, neutral, unknown, or hostile. If False is selected, the entities will enter the room without throwing a grenade (preferred setting). The last input is a point and click rally point that the units will move to once complete with their tasks.

Example

The UHRB and a normal type of building assault has been selected. The optional parameters have been left untouched.



Edit Task: 1/3/C/1-325 INF ABN [Assault Building]

Trigger Type: Completion of Previous

Required

Building (0ab60086938811dc9a8b00114311bce0, 0, UHRB, 36195)

BuildingAssaultType normal

Optional

EntryAperture

Mine Control Measure at Breach Location

Rooms To Clear

Floor To Clear

EnemyExpected ○ True ● False

☑ Enable Reactions

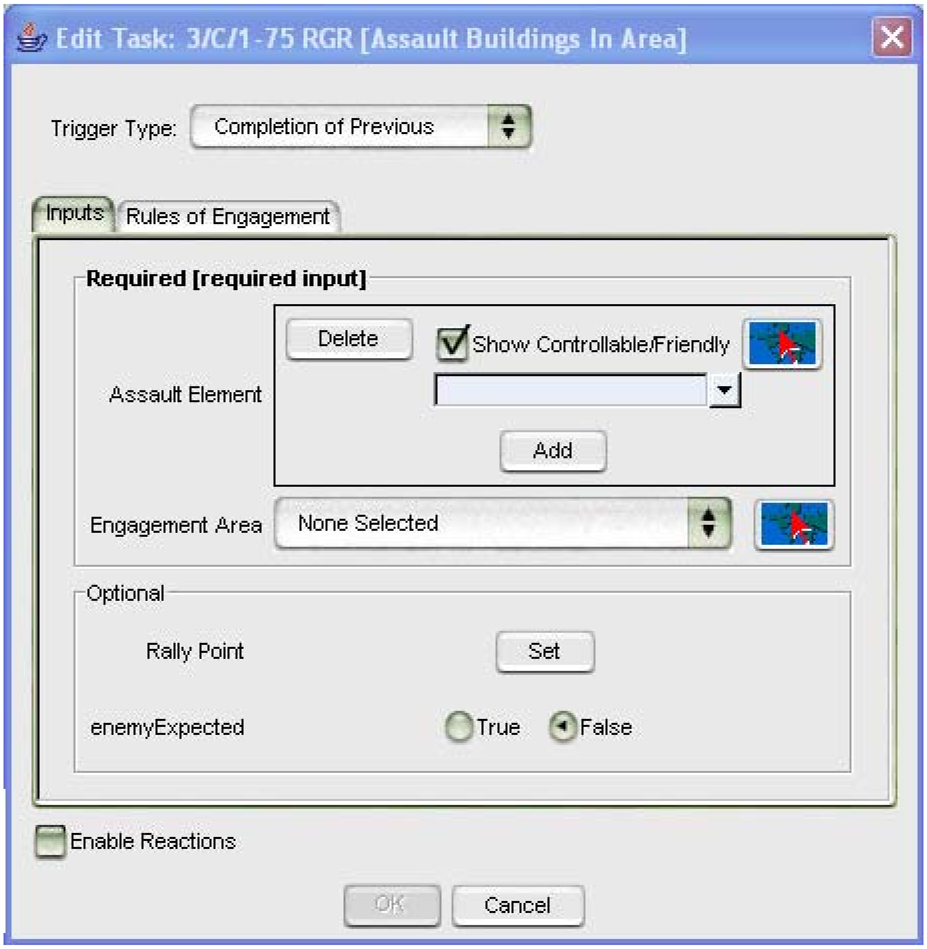
Assault Buildings in Area

Assault Buildings in Area is the primary behavior to assign platoon size elements and above the task of assaulting and clearing all Ultra High Resolution Buildings (UHRB) in a pre-defined area or objective. The behavior allows you to assign the assault force down to a Fire Team and Squad level. The behavior can be assigned to any Infantry Platoon or Company sized unit independent of the side relationship.

Behavior Parameters

Input parameters can be used to control various aspects of the behavior, including the assault element, engagement area, and rally point. In order to assign this behavior you must first draw and label an area control measure around the series of buildings you want to assault. This will be the engagement area.

Required Inputs


Edit Task: 3/C/1-75 RGR [Assault Buildings In Area]

Trigger Type: Completion of Previous

Required [required input]

Assault Element

☑ Show Controllable/Friendly

Engagement Area: None Selected

Optional

Rally Point

enemyExpected: ○ True ● False

☐ Enable Reactions

Assault Buildings in Area has two required parameters that are selected from the task organization drop down list and the pre-drawn list of designated control measures.

The “Add” button means you can add units to the assault element.

“Show Controllable Friendly” has no effect on the simulation when you are running in a stand alone mode. It has an effect of showing only the units that are controllable by your system when running in distributed mode.

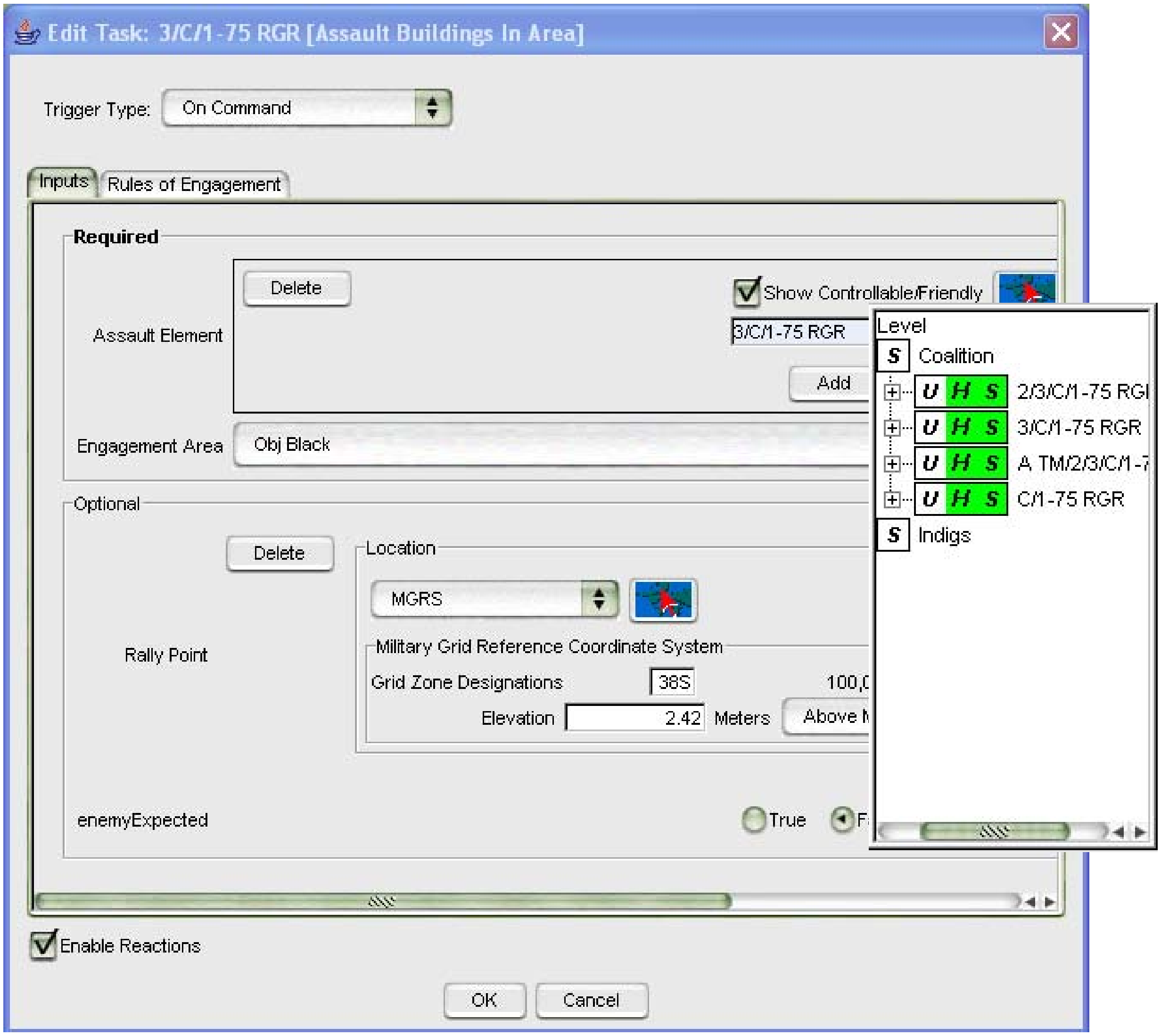
5. Behaviors

Optional Inputs

There are two optional inputs for this behavior. The first is a point and click rally point that the units will move to once complete with their tasks. The second optional input is Enemy Expected with the options of selecting True or False. This parameter triggers the unit entities to either use or not use M67 fragmentation grenades when clearing the rooms. When True is selected, the entities will throw a grenade into the room first before entering the room. They will throw this grenade no matter who is in the room, friendly, neutral, unknown, or hostile. If False is selected, the entities will enter the room without throwing a grenade.

Example

The Assault Element (3/C/1-75 RGR) is selected from a list of units available in the task organization window. This is accessed by LC on the drop down arrow. The Engagement Area (Obj Black) is also selected from a drop down list of pre-drawn control measures. The optional rally point is a point and click function, and the enemy expected is a selection of True or False (False means not expected – which means no M67 fragmentation grenade). Enable reactions insures the unit reacts to enemy contact.



Edit Task: 3/C/1-75 RGR [Assault Buildings In Area]

Trigger Type: On Command

Required

Assault Element: 3/C/1-75 RGR

☑ Show Controllable/Friendly

Engagement Area: Obj Black

Optional

Rally Point

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 38S

Elevation: 2.42 Meters

enemyExpected: ○ True ● F

☑ Enable Reactions

Level

S Coalition

U H S 2/3/C/1-75 RGI

U H S 3/C/1-75 RGR

U H S A TM/2/3/C/1-7

U H S C/1-75 RGR

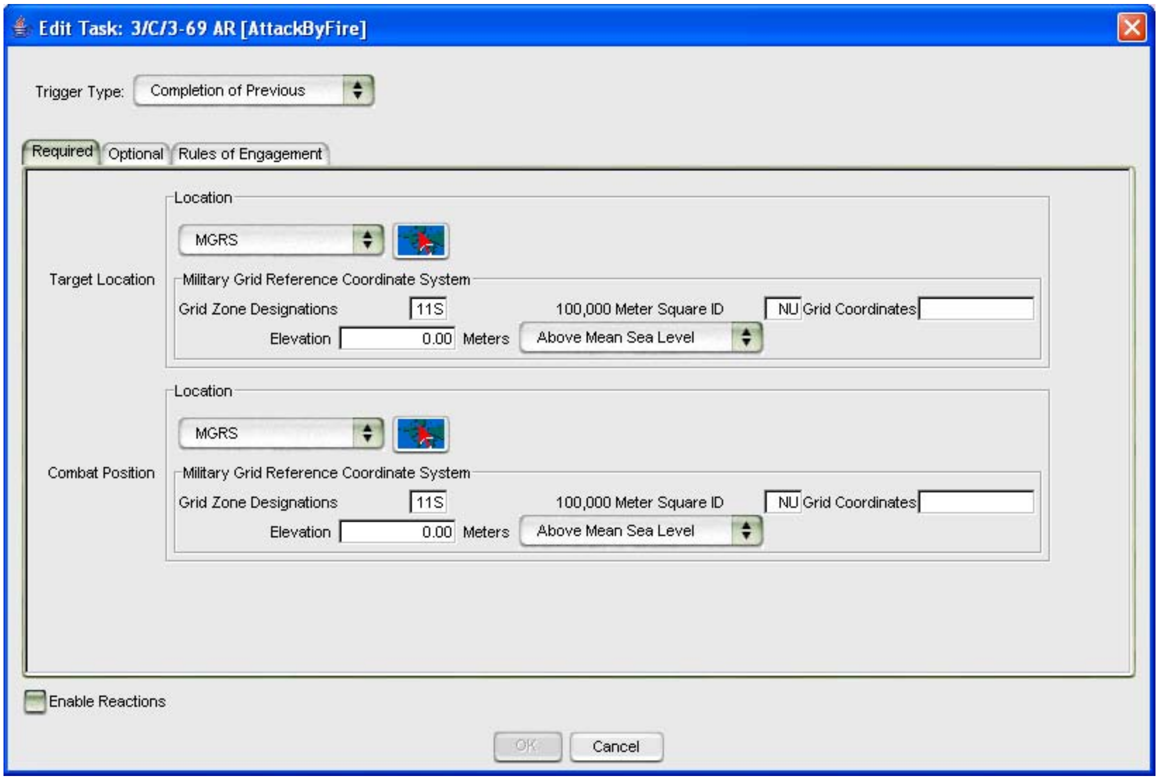
S Indigs

5. Behaviors

Attack by Fire

Attack by Fire is a primary behavior that can be executed at the Fire Team to Company level.

Behavior Parameters
Input parameters are used to select the target location, combat position, traveling formation, speed to position, engagement area, and perceived enemy locations.
Required Inputs



Edit Task: 3/C/3-69 AR [AttackByFire]

Trigger Type: Completion of Previous

Target Location
Location: MGRS
Military Grid Reference Coordinate System
Grid Zone Designations: 11S
100,000 Meter Square ID: NU
Grid Coordinates:
Elevation: 0.00 Meters
Above Mean Sea Level

Combat Position
Location: MGRS
Military Grid Reference Coordinate System
Grid Zone Designations: 11S
100,000 Meter Square ID: NU
Grid Coordinates:
Elevation: 0.00 Meters
Above Mean Sea Level

☐ Enable Reactions

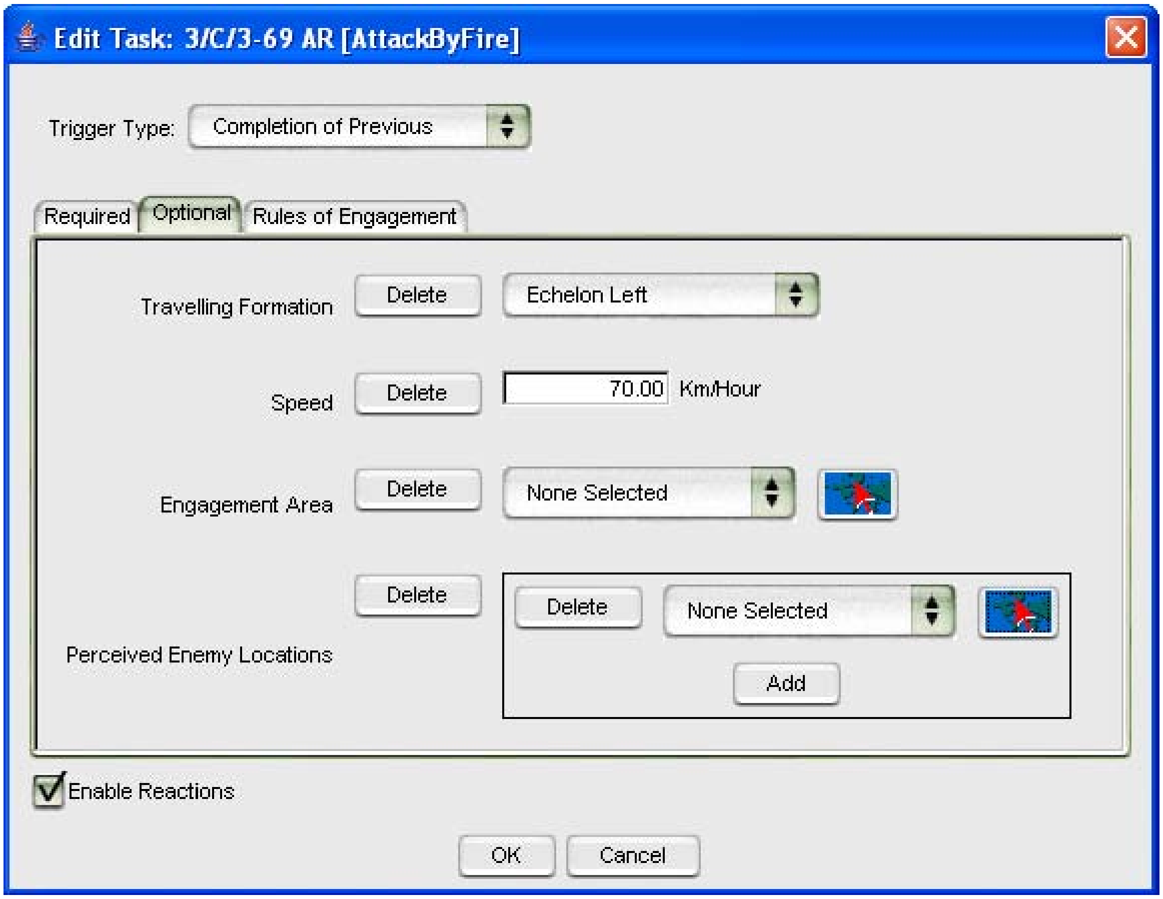
Attack by Fire has two required inputs that are both point and click processes.

Optional Inputs

There are four optional inputs for this behavior. The first is the traveling formation the unit will use to get to the Combat position; the choices are the same as in “Move Tactically. The second input requires you to input the speed you want the unit to move to the Combat Position. The third input is the engagement area, this is either selected form the drop down menu of pre-drawn control measures or selected by the point and click method, this should coincide with the required input “Target Location”. The last input is perceived enemy locations, this allows you to select multiple likely enemy locations either along the route the unit will take or within the engagement area.

Example

The example below illustrates the selections made for 3rd Platoon, Charlie Company, 3-69 Armor. The platoon will move towards the point and click selected target location and engagement area at a speed of 70 KM per hour. There were no perceived enemy locations selected.



Edit Task: 3/C/3-69 AR [AttackByFire]

Trigger Type: Completion of Previous

Travelling Formation: Echelon Left

Speed: 70.00 Km/Hour

Engagement Area: None Selected

Perceived Enemy Locations: None Selected

☑ Enable Reactions

5. Behaviors

Clear Room

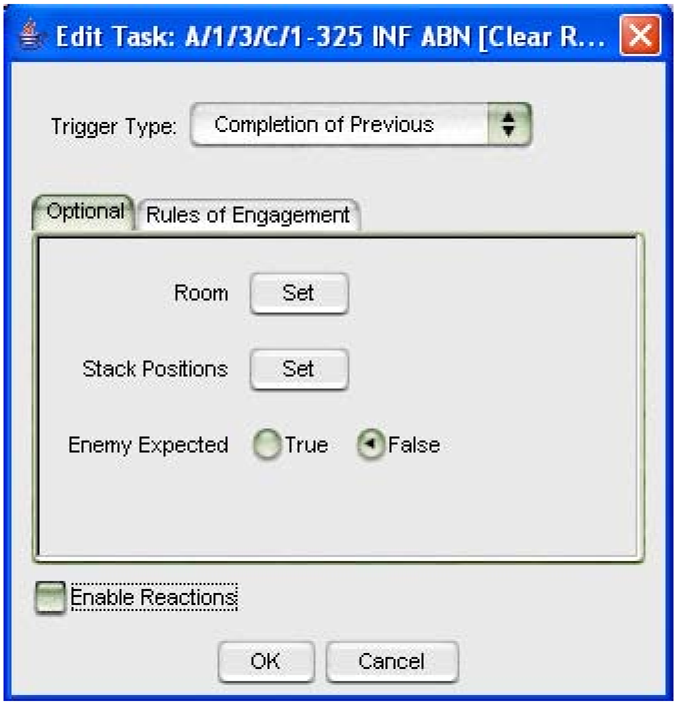
Clear Room is a primary behavior that can only be executed at the Fire Team level. Clear Room has no required tab; however, selecting the room to clear on the optional tab will give the operator more control over the scenario.

Behavior Parameters

Input parameters can be used to select the room to clear, choose the location the fire team will stack prior to going into the room, and determine whether enemy will be present or not.

Required Inputs

None



Edit Task: A/1/3/C/1-325 INF ABN [Clear R...

Trigger Type: Completion of Previous

Enemy Expected ○ True ● False

☐ Enable Reactions

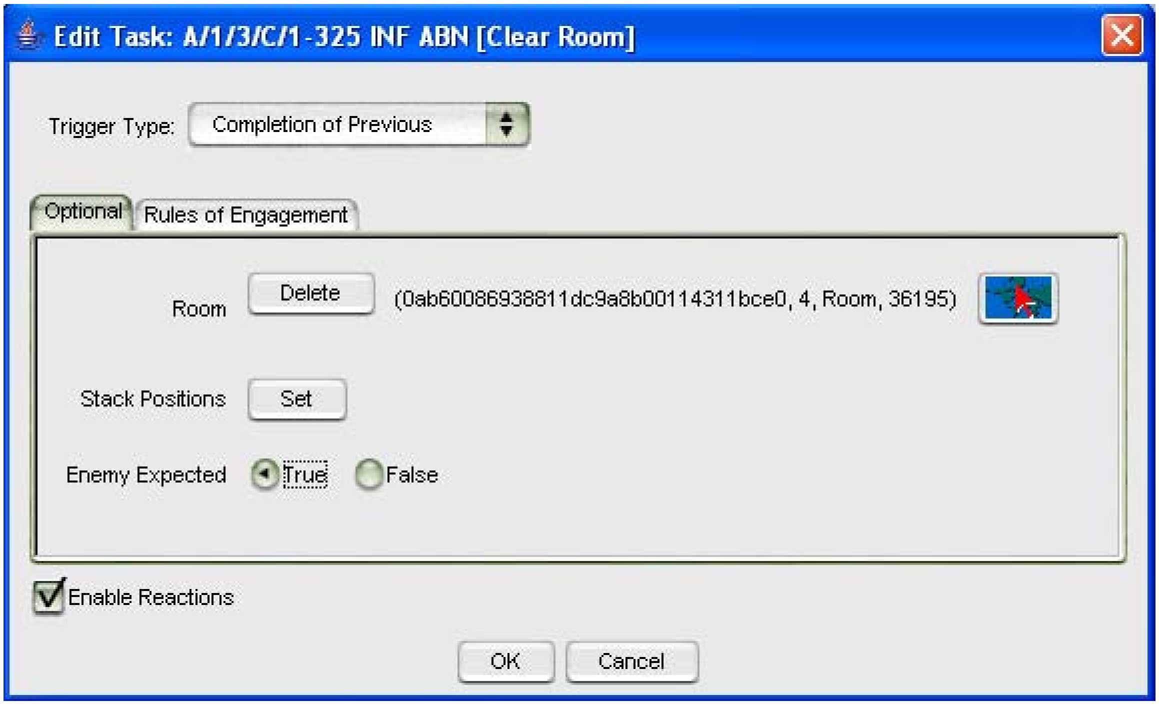
Optional Inputs

There are three optional inputs for this behavior. The first is a point-and-click method of choosing the room to clear. The rooms' system ID number appears when the room has been selected. The second is either a point-and-click or select-from-a-pull-down-menu method to identify the stack position. The third optional input is Enemy Expected with the options of selecting True or False. This parameter triggers the unit entities to either use or not use M67 fragmentation grenades when clearing the rooms. When True is selected, the entities will throw a grenade into the room first before entering the room. They will throw this grenade no matter who is in the room, friendly, neutral, unknown, or hostile. If False is selected, the entities will enter the room without throwing a grenade.

Example

5. Behaviors

The Fire Team (A/1/3/C/1-325 INF ABN) will enter and clear room 36195 and expects the enemy to be inside (True means expected – which means M67 fragmentation grenades will be used). Enable Reactions is checked insuring the fire team reacts to enemy contact.



Edit Task: A/1/3/C/1-325 INF ABN [Clear Room]

Trigger Type: Completion of Previous

Room (0ab60086938811dc9a8b00114311bce0, 4, Room, 36195)

Enemy Expected ● True ○ False

☑ Enable Reactions

Optional
Rules of Engagement
Delete
Stack Positions
Set
OK
Cancel

5. Behaviors

Conduct Checkpoint

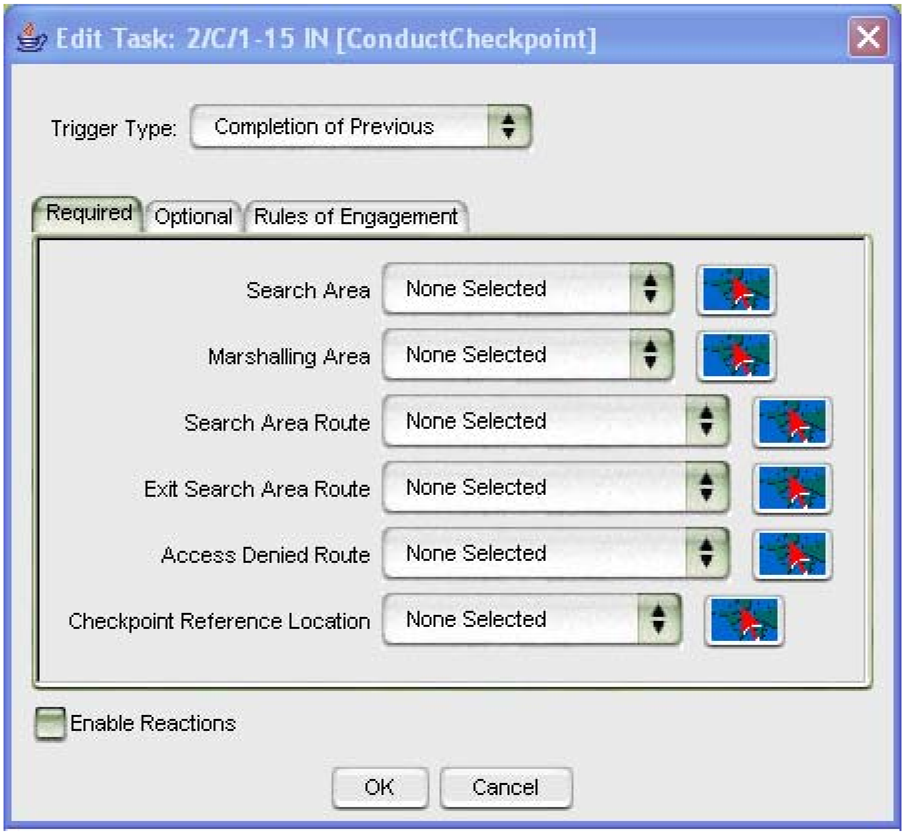
Conduct Checkpoint is the primary behavior that includes the parameters to set-up and execute checkpoint operations. This behavior can be assigned to any Infantry Platoon sized unit independent of the side relationship.

Behavior Parameters

Input parameters can be used to control various aspects of the checkpoint, including the search and marshalling areas. In order to assign this behavior you must first draw or annotate the Check point reference location (a point that the platoon moves to, and disburses from), Search Area and Search Area route, Marshalling Area, Access Denied route, and Exit Search Area Route.

Required Inputs

Conduct Checkpoint has six required parameters that are selected from a drop down list of pre-drawn or designated control measures


Edit Task: 2/C/1-15 IN [ConductCheckpoint]

Trigger Type: Completion of Previous

Search Area: None Selected

Marshalling Area: None Selected

Search Area Route: None Selected

Exit Search Area Route: None Selected

Access Denied Route: None Selected

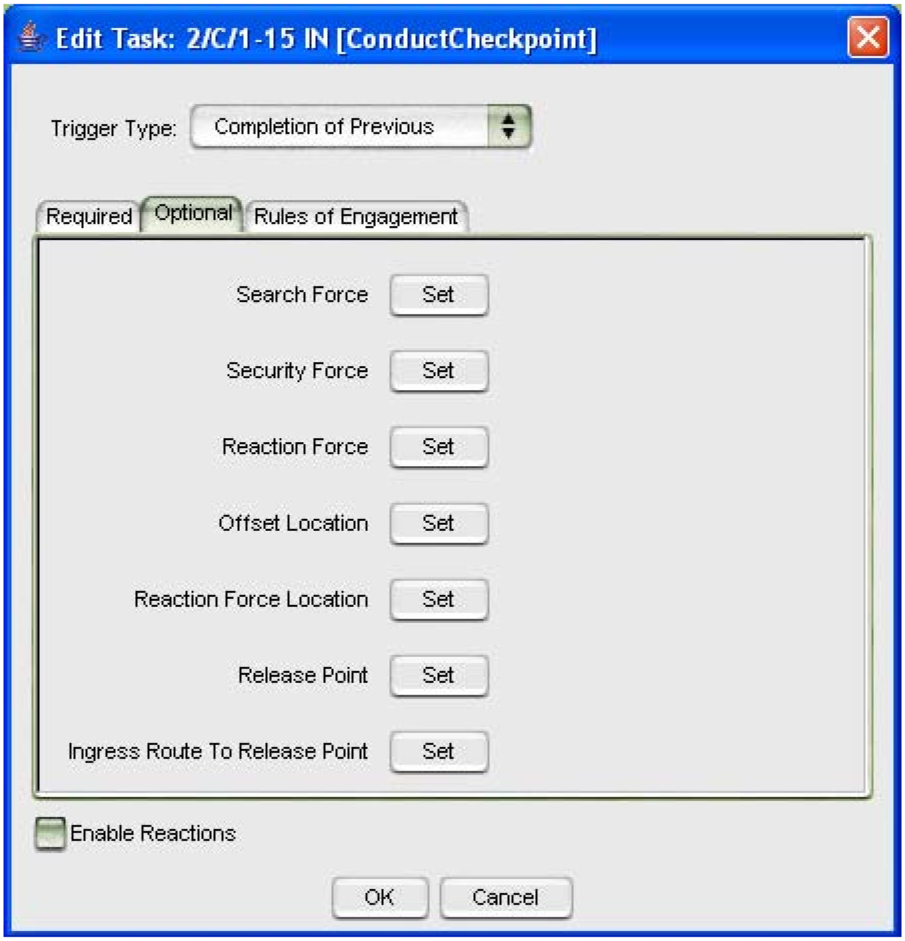
Checkpoint Reference Location: None Selected

☐ Enable Reactions

5. Behaviors

Optional Inputs

The optional inputs for this behavior should be considered required. You must select a unit to perform the duties of each force (select an Infantry Fire Team for each force). If you do not to select any optional parameters the OneSAF software will move the unit towards the checkpoints pre-drawn control measures, but will not complete the task, which will in turn NOT allow the scenario to progress towards completion.



Edit Task: 2/C/1-15 IN [ConductCheckpoint]

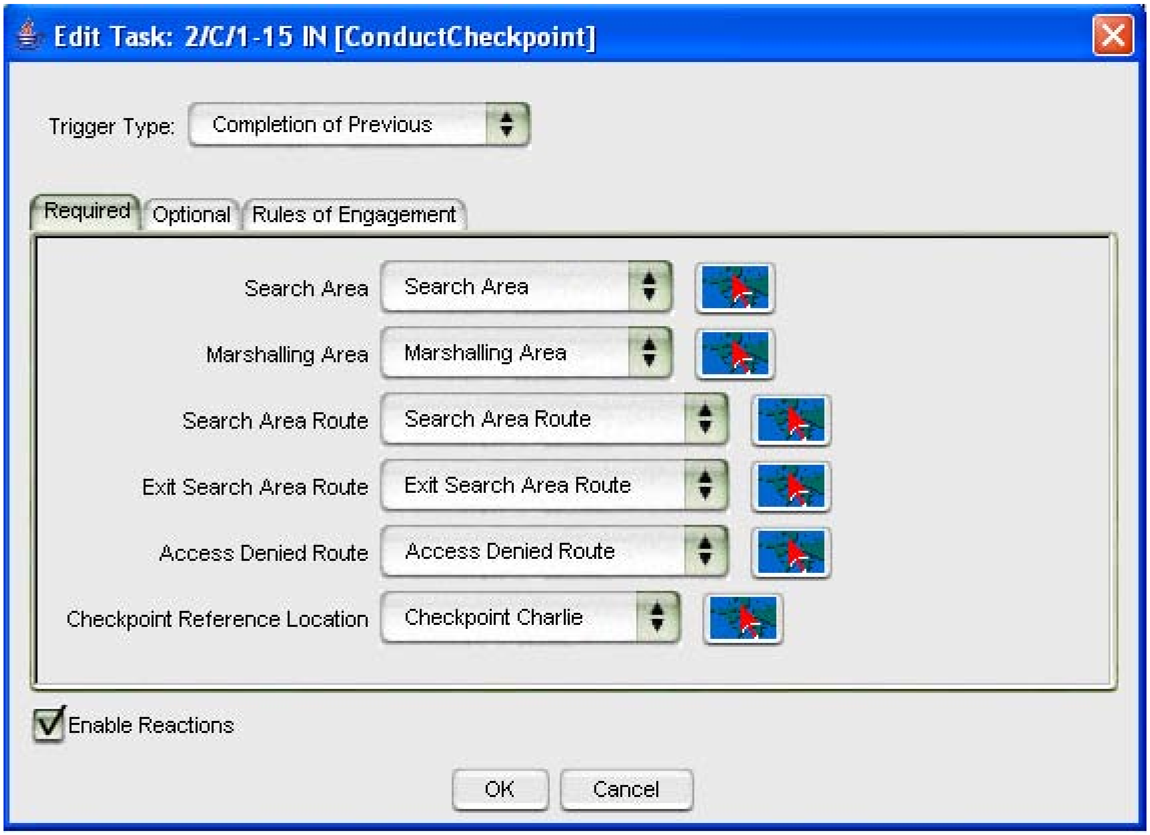
Trigger Type: Completion of Previous

Required
Optional
Rules of Engagement
Search Force
Set
Security Force
Set
Reaction Force
Set
Offset Location
Set
Reaction Force Location
Set
Release Point
Set
Ingress Route To Release Point
Set
☐ Enable Reactions
OK
Cancel

5. Behaviors

Example

Each required parameter is selected from the drop down menu of pre-drawn or designated control measures. In this example the control measures were named the same as the required parameter to eliminate confusion when assigning areas and forces. All six control measures are shown in the graphic on this page.



Edit Task: 2/C/1-15 IN [ConductCheckpoint]

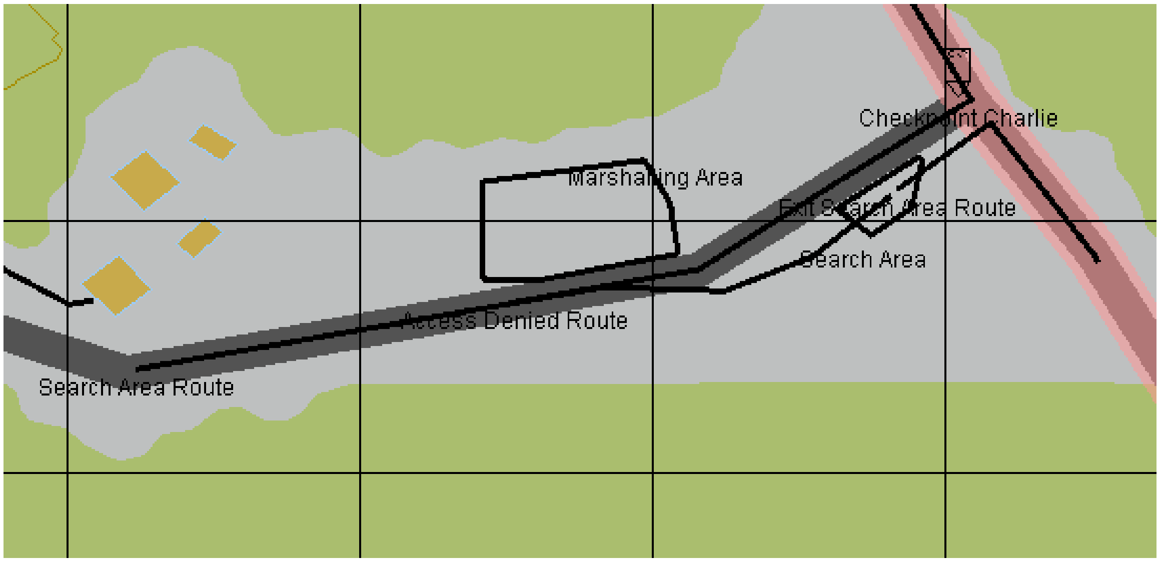
Trigger Type: Completion of Previous

Required
Optional
Rules of Engagement

Search Area	Search Area
Marshalling Area	Marshalling Area
Search Area Route	Search Area Route
Exit Search Area Route	Exit Search Area Route
Access Denied Route	Access Denied Route
Checkpoint Reference Location	Checkpoint Charlie

☑ Enable Reactions

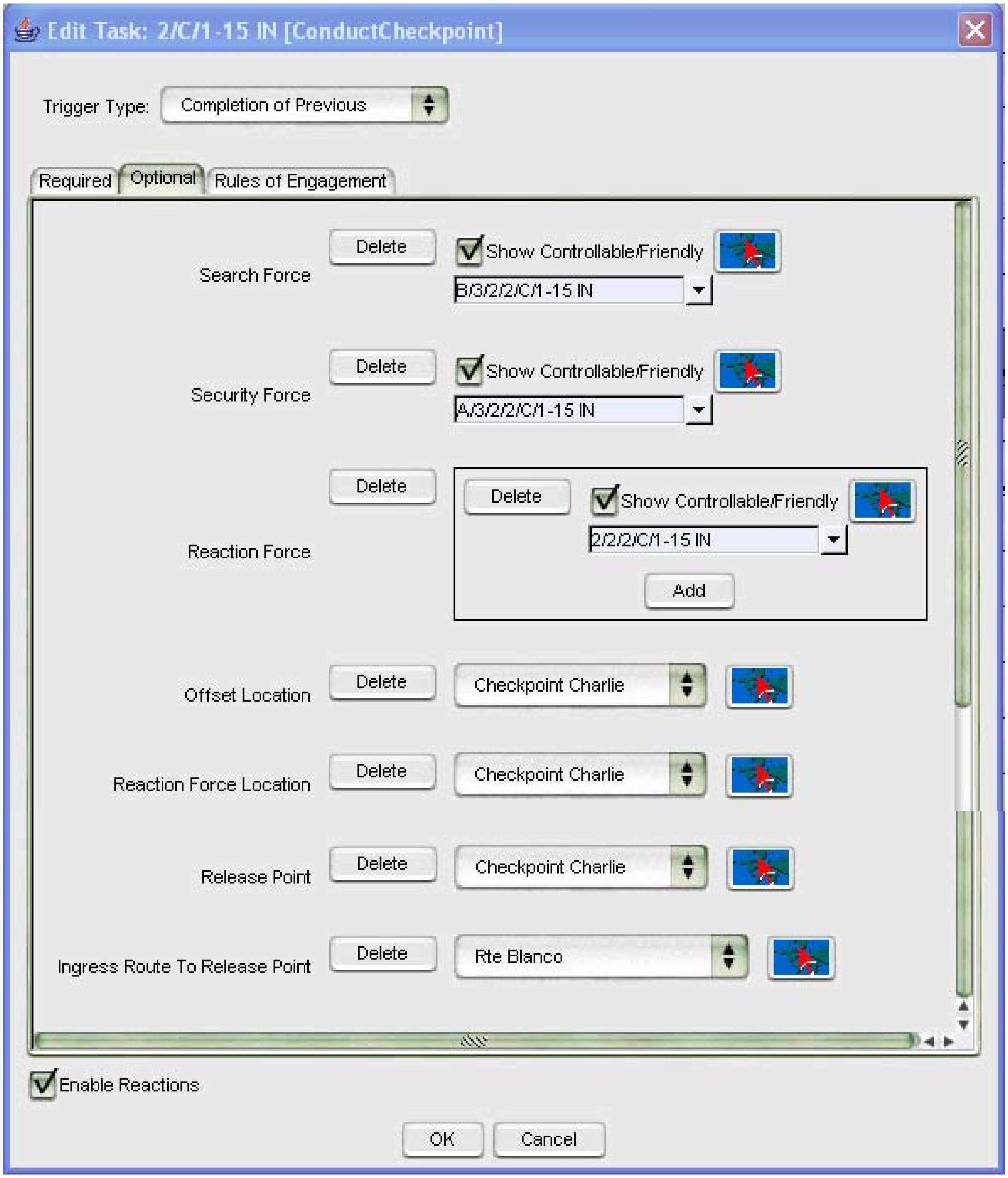
OK
Cancel



Checkpoint Charlie
Marshalling Area
Exit Search Area Route
Search Area
Access Denied Route
Search Area Route

5. Behaviors

Assigning units for each force are selected from a task organization drop down menu. The locations, points, and routes are identified from the list of pre-drawn control measures.



Edit Task: 2/C/1-15 IN [ConductCheckpoint]

Trigger Type: Completion of Previous

Search Force: B/3/2/2/C/1-15 IN ☑ Show Controllable/Friendly

Security Force: A/3/2/2/C/1-15 IN ☑ Show Controllable/Friendly

Reaction Force: 2/2/2/C/1-15 IN ☑ Show Controllable/Friendly

Offset Location: Checkpoint Charlie

Reaction Force Location: Checkpoint Charlie

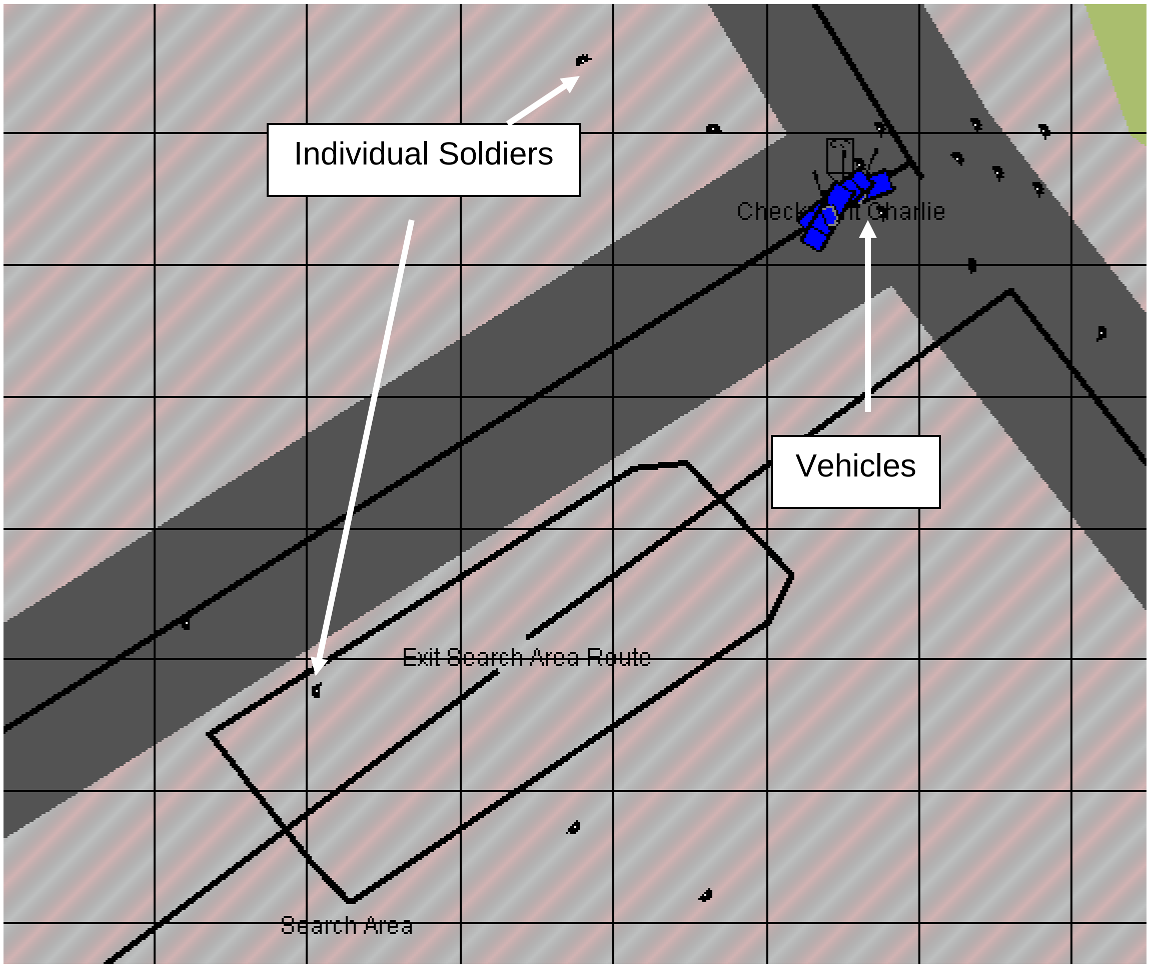
Release Point: Checkpoint Charlie

Ingress Route To Release Point: Rte Blanco

☑ Enable Reactions

5. Behaviors

The search, security, and reaction forces move to the assigned areas identified in the optional parameters.


Individual Soldiers
Checkpoint Charlie
Vehicles
Exit Search Area Route
Search Area

5. Behaviors

Conduct Raid

Conduct Raid is the primary behavior assigning platoon and company size elements the task of raiding a fixed site. The behavior allows you to choose the assault, support, reserve, security, and demolition elements from a list of friendly units. The only required graphic control measure is the “Engagement Area”; all other required locations are assigned with the point-and-click method. The behavior can be assigned to any Infantry Platoon or Company sized unit independent of the side relationship.

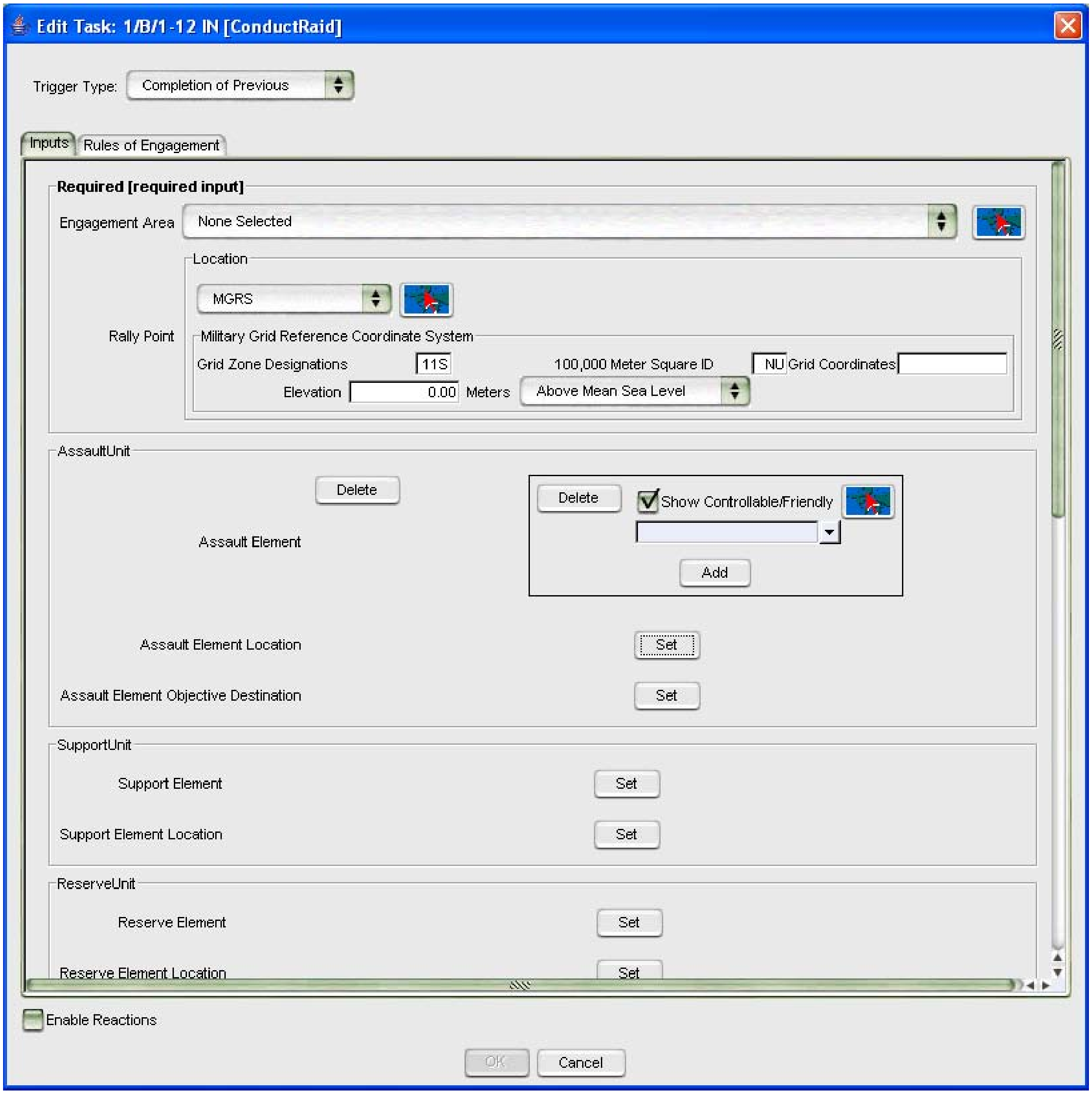
Behavior Parameters

Input parameters can be used to select each element and the elements location during the raid. Additional parameters allow you to set the amount of time for the raid, whether to capture or rescue entities, and to set the disengagement criteria based of unit personnel strength.

Required Inputs

There are two defined required inputs; engagement area is selected from a pull down list of pre-drawn control measures; rally point is selected using the point-and-click method. The undefined required inputs are selecting the assault and support elements; without identifying these two elements the behavior will not run. The reserve, security, and demolition elements, as well as any of the optional inputs are not required for this behavior to run. However, to properly conduct a raid all elements should be selected and placed in a location to support the mission. The following 2 screen shots list both the required and optional inputs.

5. Behaviors


Edit Task: 1/B/1-12 IN [ConductRaid]

Trigger Type: Completion of Previous

Required [required input]

Engagement Area: None Selected

Rally Point

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 11S

100,000 Meter Square ID: NU

Grid Coordinates:

Elevation: 0.00 Meters Above Mean Sea Level

AssaultUnit

Assault Element

☑ Show Controllable/Friendly

Assault Element Location

Assault Element Objective Destination

SupportUnit

Support Element

Support Element Location

ReserveUnit

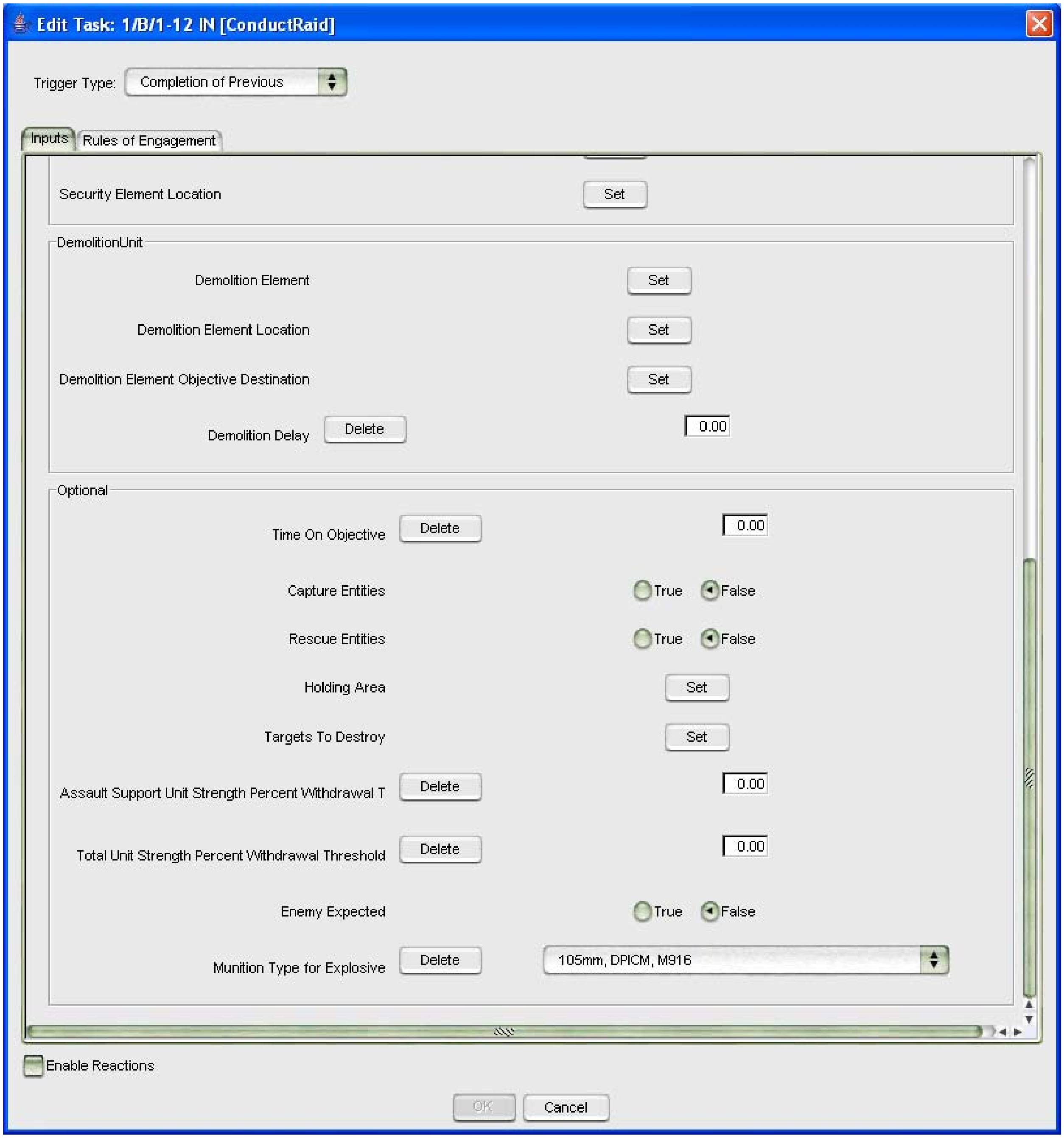
Reserve Element

Reserve Element Location

☐ Enable Reactions

Inputs
Rules of Engagement
Delete
Delete
Add
Set
Set
Set
Set
Set
Set
OK
Cancel

5. Behaviors


Edit Task: 1/B/1-12 IN [ConductRaid]

Trigger Type: Completion of Previous

Security Element Location — Set

DemolitionUnit

Demolition Element — Set

Demolition Element Location — Set

Demolition Element Objective Destination — Set

Demolition Delay — Delete — 0.00

Optional

Time On Objective — Delete — 0.00

Capture Entities ○ True ● False

Rescue Entities ○ True ● False

Holding Area — Set

Targets To Destroy — Set

Assault Support Unit Strength Percent Withdrawal T — Delete — 0.00

Total Unit Strength Percent Withdrawal Threshold — Delete — 0.00

Enemy Expected ○ True ● False

Munition Type for Explosive — Delete — 105mm, DPICM, M916

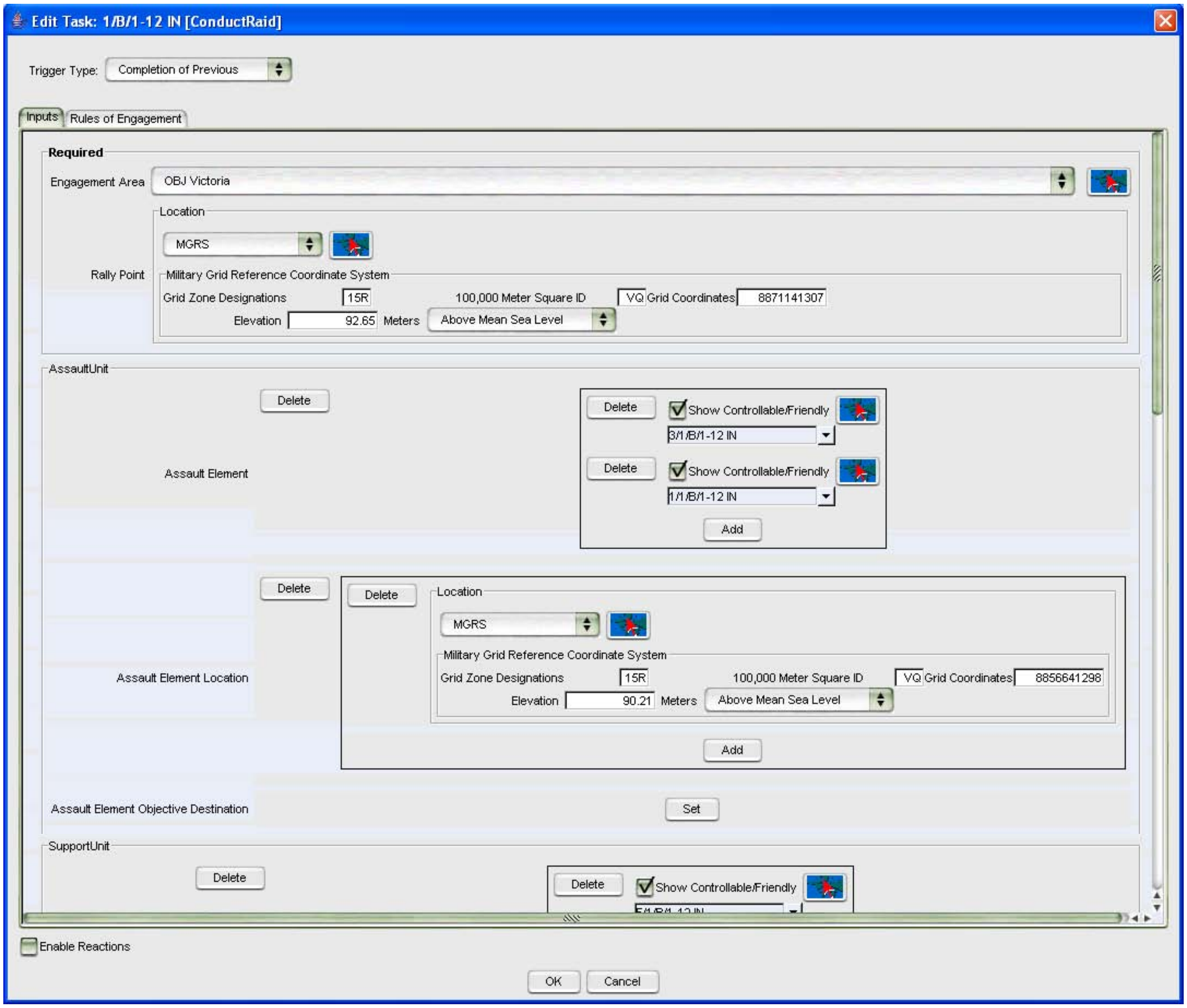
☐ Enable Reactions

Optional Inputs

There are nine optional inputs for this behavior. Three of the inputs affect how long the scenario will run; “Time on Objective” and two personnel strength withdrawal thresholds. Three inputs are selected by keying either “True” or “False” to select whether the assaulting force will either capture or rescue entities, or face enemy on the objective. Selecting a "Holding Area" in which to place the captured entities is made from a pull down list of pre-drawn areas. Selecting specific targets to destroy is also selected from a pre-drawn list. Finally, if a demolition team is chosen, then you have the option of selecting the type of explosives they will use (the default explosive is C4; one of the demolition team entities must have the explosive in the basic load).

Example

1st Platoon Bravo Company 1st of the 12th Infantry is conducting the raid on OBJ Victoria. The assault element (1st and 3rd Squads) was selected from within the platoon. Their location prior to the assault was selected using the point-and-click method (there is no marking, i.e. action point, on the PVD screen). Selection of the remaining elements follows the same process.


Edit Task: 1/B/1-12 IN [ConductRaid]

Trigger Type: Completion of Previous

Required

Engagement Area: OBJ Victoria

Rally Point

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 15R

100,000 Meter Square ID: VQ

Grid Coordinates: 8871141307

Elevation: 92.65 Meters, Above Mean Sea Level

AssaultUnit

Assault Element:

☑ Show Controllable/Friendly: 3/1/B/1-12 IN

☑ Show Controllable/Friendly: 1/1/B/1-12 IN

Assault Element Location

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 15R

100,000 Meter Square ID: VQ

Grid Coordinates: 8856641298

Elevation: 90.21 Meters, Above Mean Sea Level

Assault Element Objective Destination

SupportUnit

☑ Show Controllable/Friendly

☐ Enable Reactions

5. Behaviors

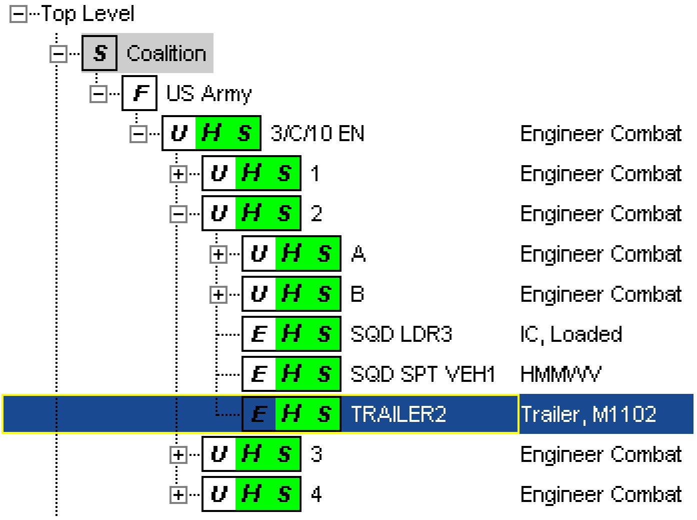
Emplace Minefield

Emplace Minefield is the primary behavior for building a minefield. This behavior should be assigned to a Platoon sized element or higher independent of the side relationship. The Unit must have a minimum of 100 AT-21 Mines (*Mine, AT, M21*) added to its *basic load* in order to complete the behavior. However, you cannot add equipment or supplies to the units' basic load; you must add equipment or supplies to one of the entities basic loads.

Once you have identified the unit to emplace the minefield you must first add the equipment or supplies before assigning the behavior.

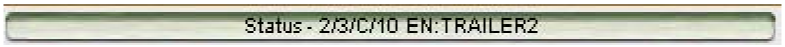
Adding Equipment or Supplies

- **In the Task organization window select which entity, within the unit, you want to add equipment or supplies to.**
- **RC on the entity name, mouse over "Properties" and LC.**



	Top Level	
S	Coalition	
F	US Army	
U H S	3/C/10 EN	Engineer Combat
U H S	1	Engineer Combat
U H S	2	Engineer Combat
U H S	A	Engineer Combat
U H S	B	Engineer Combat
E H S	SQD LDR3	IC, Loaded
E H S	SQD SPT VEH1	HMMWV
E H S	TRAILER2	Trailer, M1102
U H S	3	Engineer Combat
U H S	4	Engineer Combat

- **LC the "Status" bar at the bottom of the MCT window.**

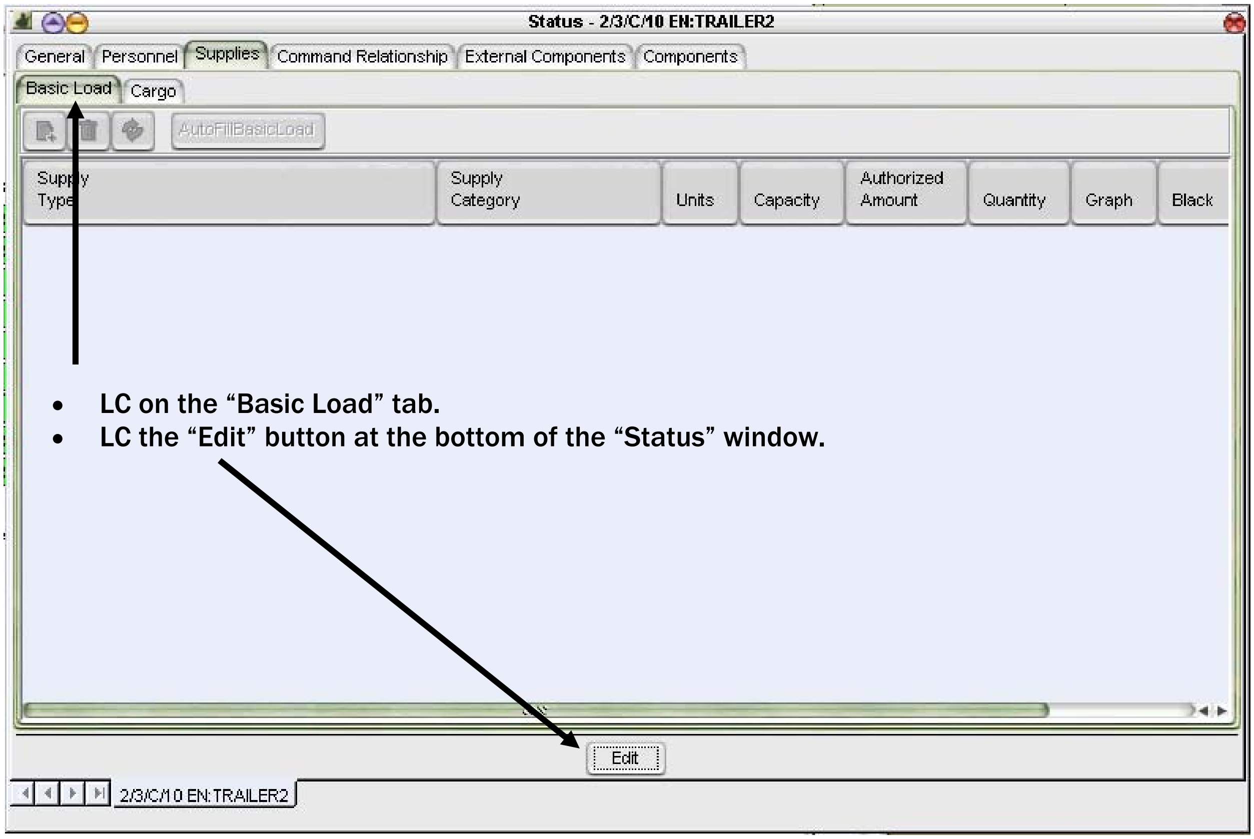


Status - 2/3/C/10 EN:TRAILER2

- **Expand the "Status" window.**

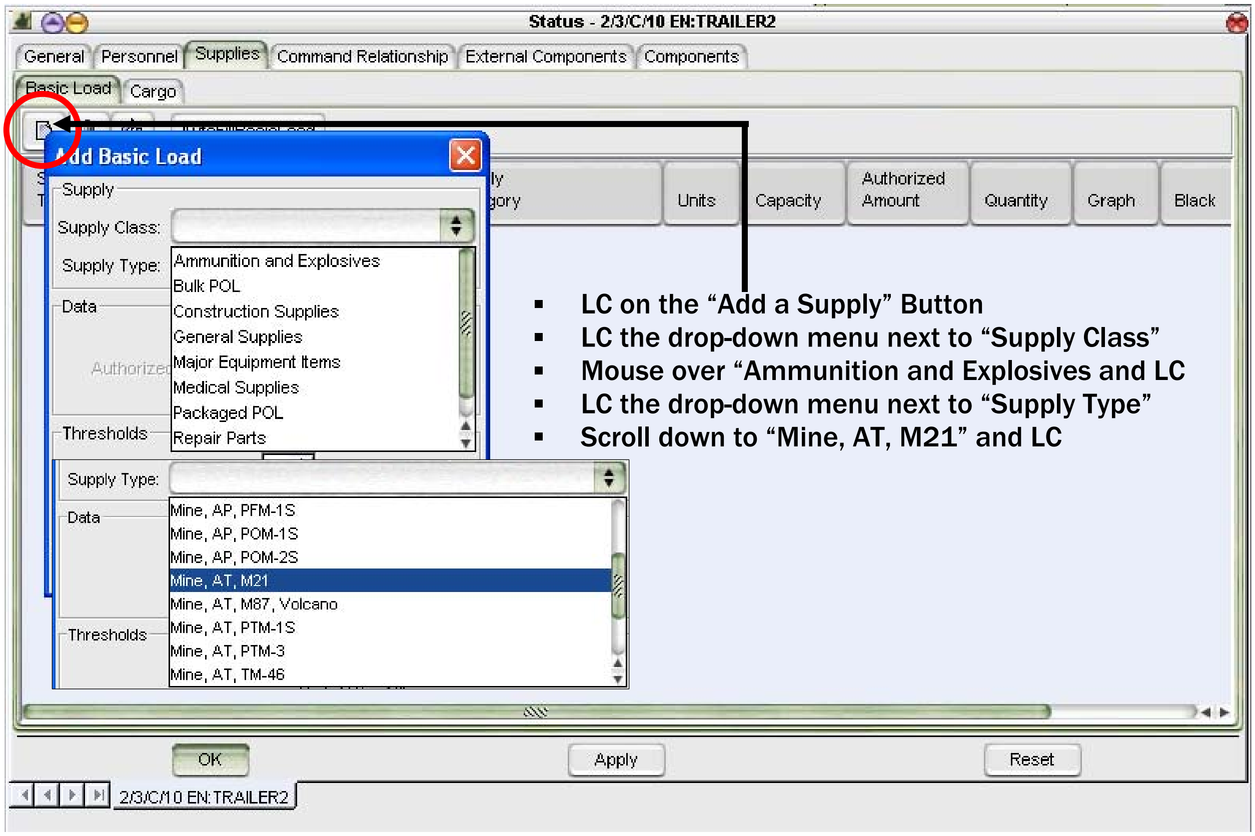
5. Behaviors

- LC on the “Supplies” tab in the “Status” window.



Status - 2/3/C/10 EN:TRAILER2
General
Personnel
Supplies
Command Relationship
External Components
Components
Basic Load
Cargo
AutoFillBasicLoad
Supply Type
Supply Category
Units
Capacity
Authorized Amount
Quantity
Graph
Black
Edit
2/3/C/10 EN:TRAILER2

- LC on the “Basic Load” tab.
- LC the “Edit” button at the bottom of the “Status” window.

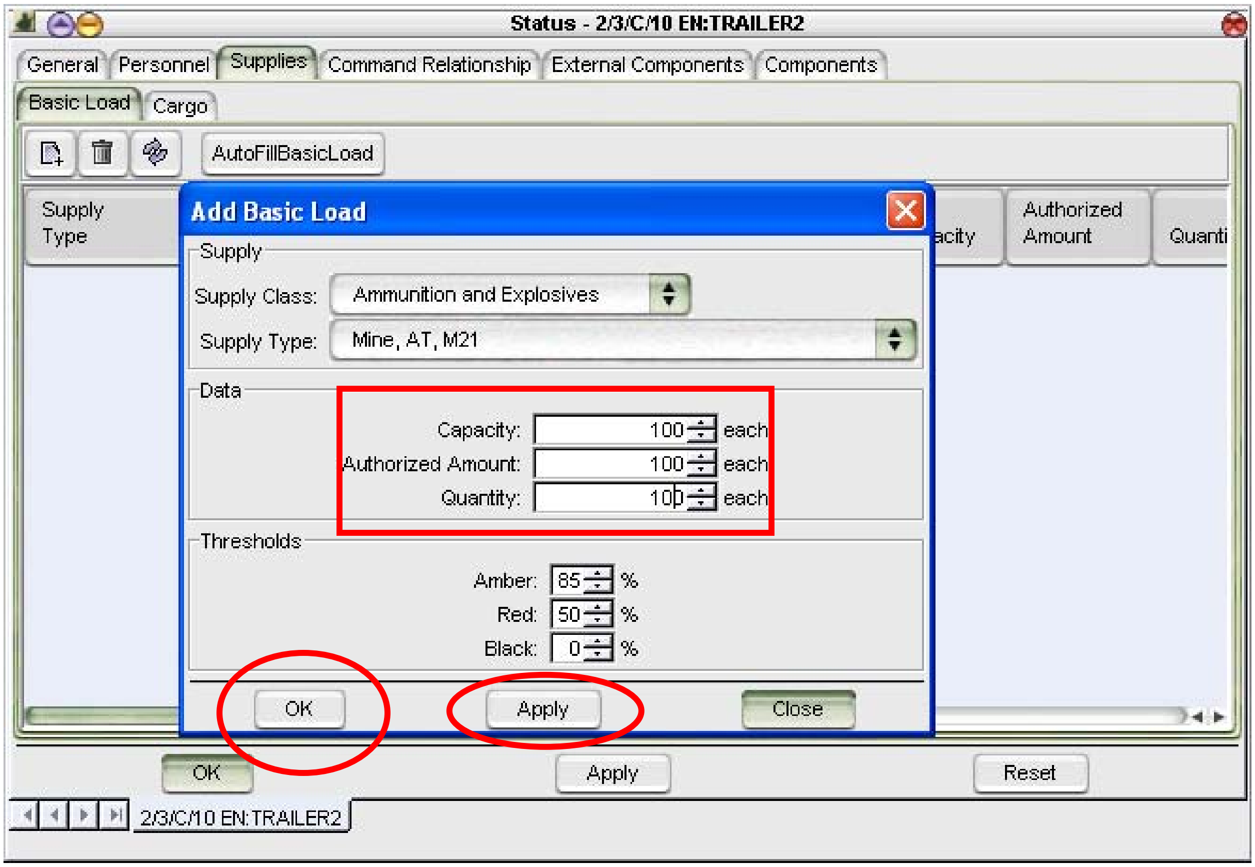


Status - 2/3/C/10 EN:TRAILER2
General
Personnel
Supplies
Command Relationship
External Components
Components
Basic Load
Cargo
Add Basic Load
Supply
Supply Class:
Supply Type:
Data
Authorize
Thresholds
Ammunition and Explosives
Bulk POL
Construction Supplies
General Supplies
Major Equipment Items
Medical Supplies
Packaged POL
Repair Parts
Supply Type:
Data
Thresholds
Mine, AP, PFM-1S
Mine, AP, POM-1S
Mine, AP, POM-2S
Mine, AT, M21
Mine, AT, M87, Volcano
Mine, AT, PTM-1S
Mine, AT, PTM-3
Mine, AT, TM-46
Units
Capacity
Authorized Amount
Quantity
Graph
Black
OK
Apply
Reset
2/3/C/10 EN:TRAILER2

- LC on the “Add a Supply” Button
- LC the drop-down menu next to “Supply Class”
- Mouse over “Ammunition and Explosives and LC
- LC the drop-down menu next to “Supply Type”
- Scroll down to “Mine, AT, M21” and LC

5. Behaviors

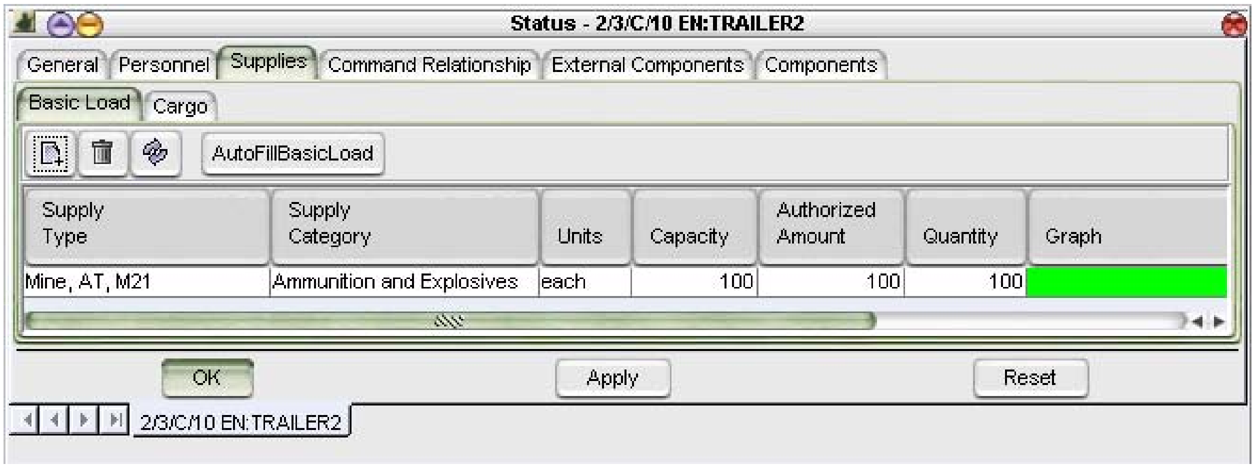
- **Fill in the “Capacity”, “Authorized Amount”, and “Quantity” with 100.**
- **LC “Apply” then “OK” on the “Add Basic Load” window**


Status - 2/3/C/10 EN:TRAILER2
General
Personnel
Supplies
Command Relationship
External Components
Components
Basic Load
Cargo
AutoFillBasicLoad
Supply Type
acity
Authorized Amount
Quanti
Add Basic Load
Supply
Data
Thresholds
OK
Apply
Close
OK
Apply
Reset
2/3/C/10 EN:TRAILER2

Supply Class: Ammunition and Explosives
Supply Type: Mine, AT, M21

Capacity: 100 each
Authorized Amount: 100 each
Quantity: 100 each

Amber: 85 %
Red: 50 %
Black: 0 %


Status - 2/3/C/10 EN:TRAILER2
General
Personnel
Supplies
Command Relationship
External Components
Components
Basic Load
Cargo
AutoFillBasicLoad
OK
Apply
Reset
2/3/C/10 EN:TRAILER2

Supply Type	Supply Category	Units	Capacity	Authorized Amount	Quantity	Graph
Mine, AT, M21	Ammunition and Explosives	each	100	100	100	🟩

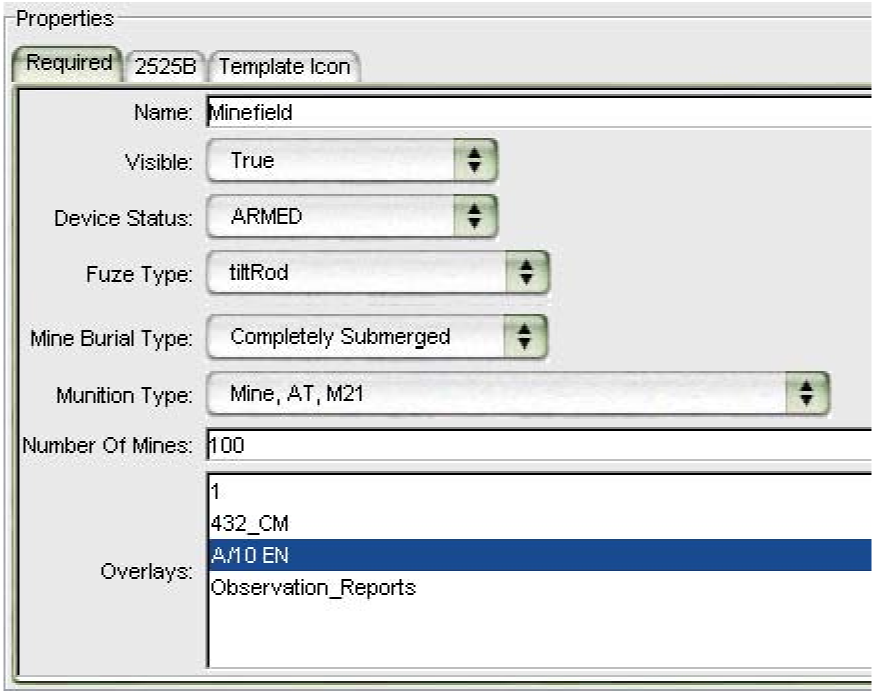
LC “Apply” then “OK” on the “Status” window

5. Behaviors

Now that you have added the equipment or supplies to the entity you are ready to define the emplace minefield behavior parameters.

Behavior Parameters

There is only one input parameter for this behavior. It requires a pre-drawn minefield location using the Create Palette. The screen capture below depicts a “controlled minefield” control measure selected from the create palette. The parameters for visible, device status, fuze type, mine burial type, and munition type are selected from a drop-down list.

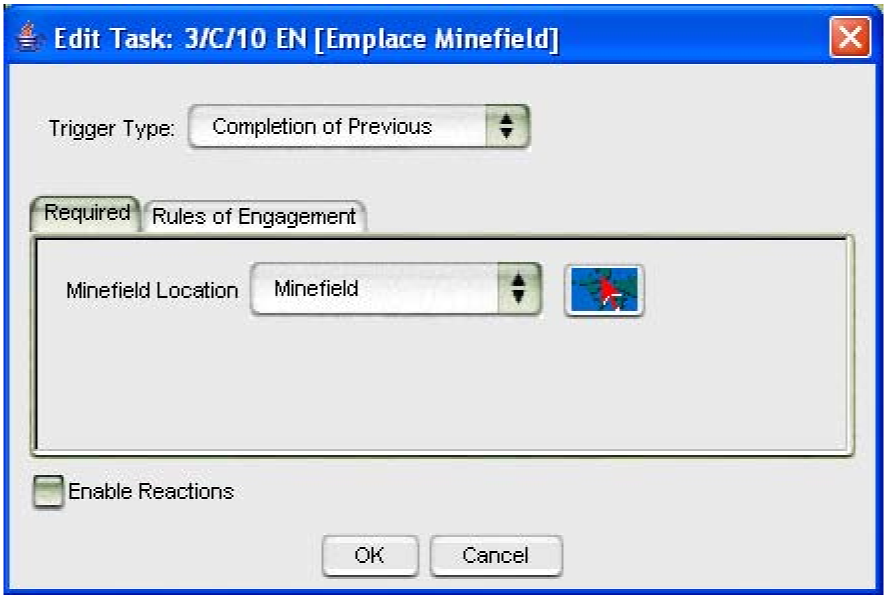


Name: Minefield
Visible: True
Device Status: ARMED
Fuze Type: tiltRod
Mine Burial Type: Completely Submerged
Munition Type: Mine, AT, M21
Number Of Mines: 100
Overlays:
1
432_CM
A/10 EN
Observation_Reports

5. Behaviors

Required Inputs

The Emplace Minefield required input is Minefield Location.

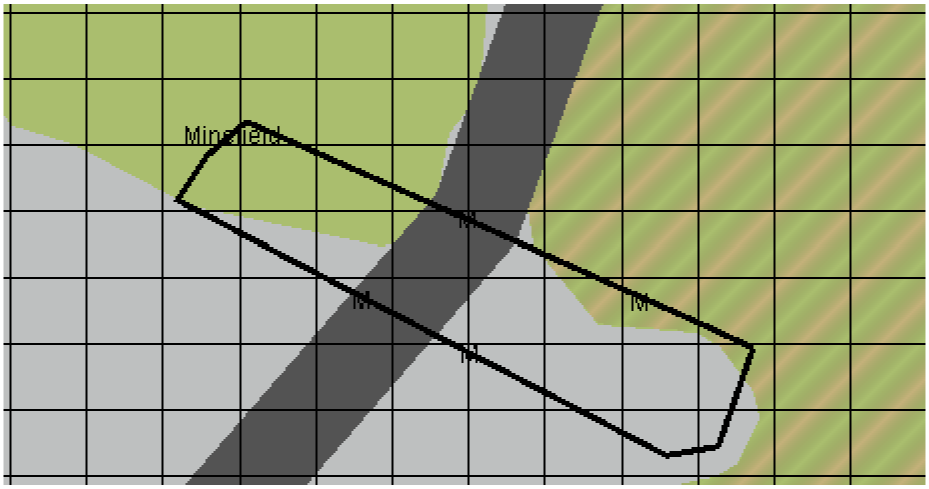

Edit Task: 3/C/10 EN [Emplace Minefield]

Trigger Type: Completion of Previous

Minefield Location: Minefield

☐ Enable Reactions

Required
Rules of Engagement
OK
Cancel

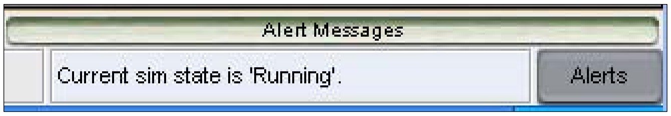

Minefield
M
M
M
M

Optional Inputs

There are no optional inputs.

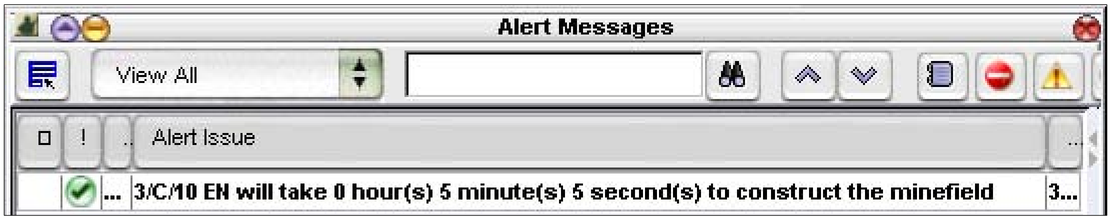
Example

The above screen shot shows the input required to assign the behavior. Once initiated the OneSAF system moves the unit away from the designated minefield, but begins the building process. In the run mode, the system sends an Alert Message updating the user with the time remaining to construct the minefield. The Alerts button in the lower right corner of the screen begins to flash grey. LC on the button to view the messages.



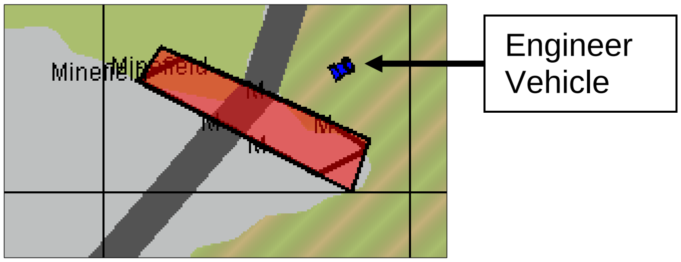
Current sim state is 'Running'.

The Alert Messages window appears with a message similar to the one in the screen shot below.



3/C/10 EN will take 0 hour(s) 5 minute(s) 5 second(s) to construct the minefield 3...

Once the Elapsed Simulation Time has run 5 minutes and 5 seconds the pre-drawn minefield on the PVD screen will turn red indicating completion of the behavior.



The time to complete the behavior increases with the amount of mines the unit emplaces.

Issue Fire Order

Issue Fire Order is the primary behavior used to facilitate indirect fire tasks. This behavior can be assigned to any element that has indirect fire capabilities from the section level and higher independent of the side relationship.

Behavior Parameters

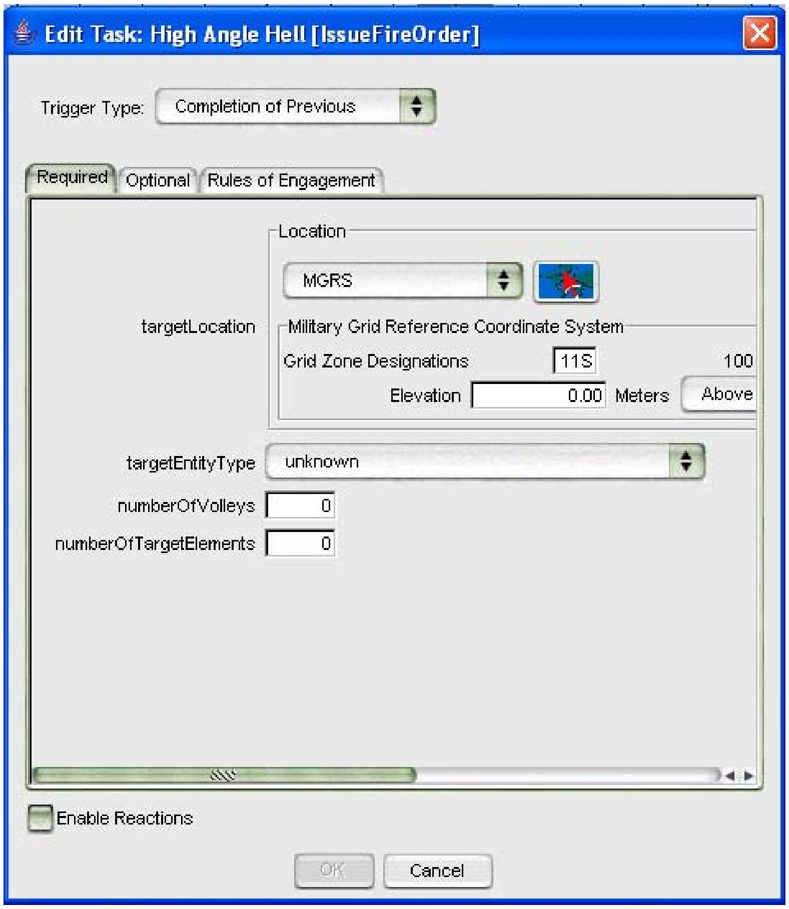
Input parameters can be used to control various aspects of the indirect fire role, including the target location, size and type, and the type of round, number of firing volleys and size of the fire box. There are no required graphic control measures for this behavior.

The firing entities will shoot the number and type of rounds that are within their basic load.

OneSAF will only fire at targets that are within range of the gun system; OneSAF will generate and display an error message if the targets are out of range.

Required Inputs

Issue Fire Order has four required parameters that are selected by point-and-click location methods (Target Location), a drop down list of vehicles or target types (Target/Entity Type) and fill-in the blank (number of volleys and target elements).


Edit Task: High Angle Hell [IssueFireOrder]

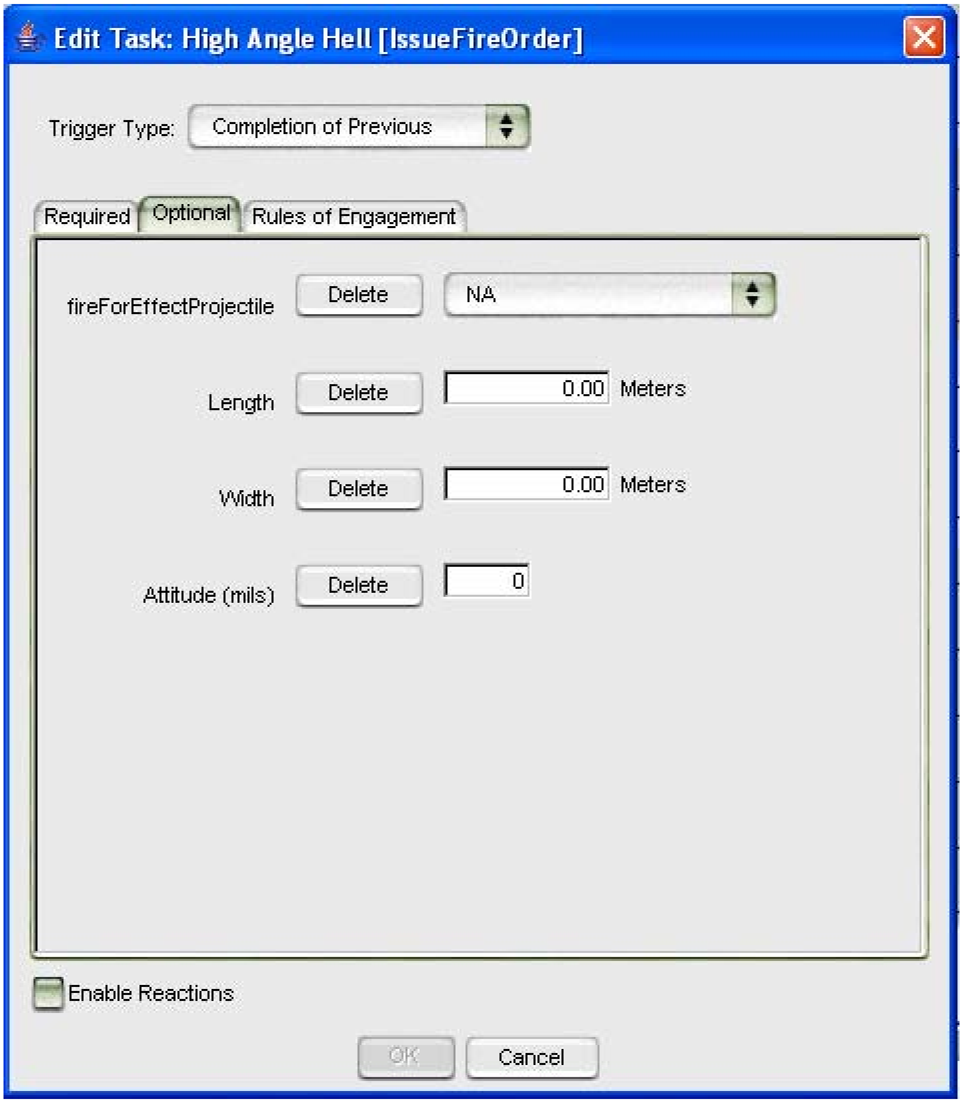
Trigger Type: Completion of Previous

targetLocation
Location: MGRS
Military Grid Reference Coordinate System
Grid Zone Designations: 11S
100
Elevation: 0.00 Meters Above

targetEntityType: unknown
numberOfVolleys: 0
numberOfTargetElements: 0

Optional Inputs

There are four optional inputs for this behavior. The Fire for Effect Projectile is selected from a pre-populated pull down list of rounds available to the type of weapon system the unit is carrying. This type of round can differ from the initial rounds fired if you desire. The length and width of the fire box can be set in meters, and the attitude of the guns is set in mils from 0 to 6400.


Required
Optional
Rules of Engagement
Delete
Delete
Delete
Delete
OK
Cancel

Edit Task: High Angle Hell [IssueFireOrder]

Trigger Type: Completion of Previous

fireForEffectProjectile: NA

Length: 0.00 Meters

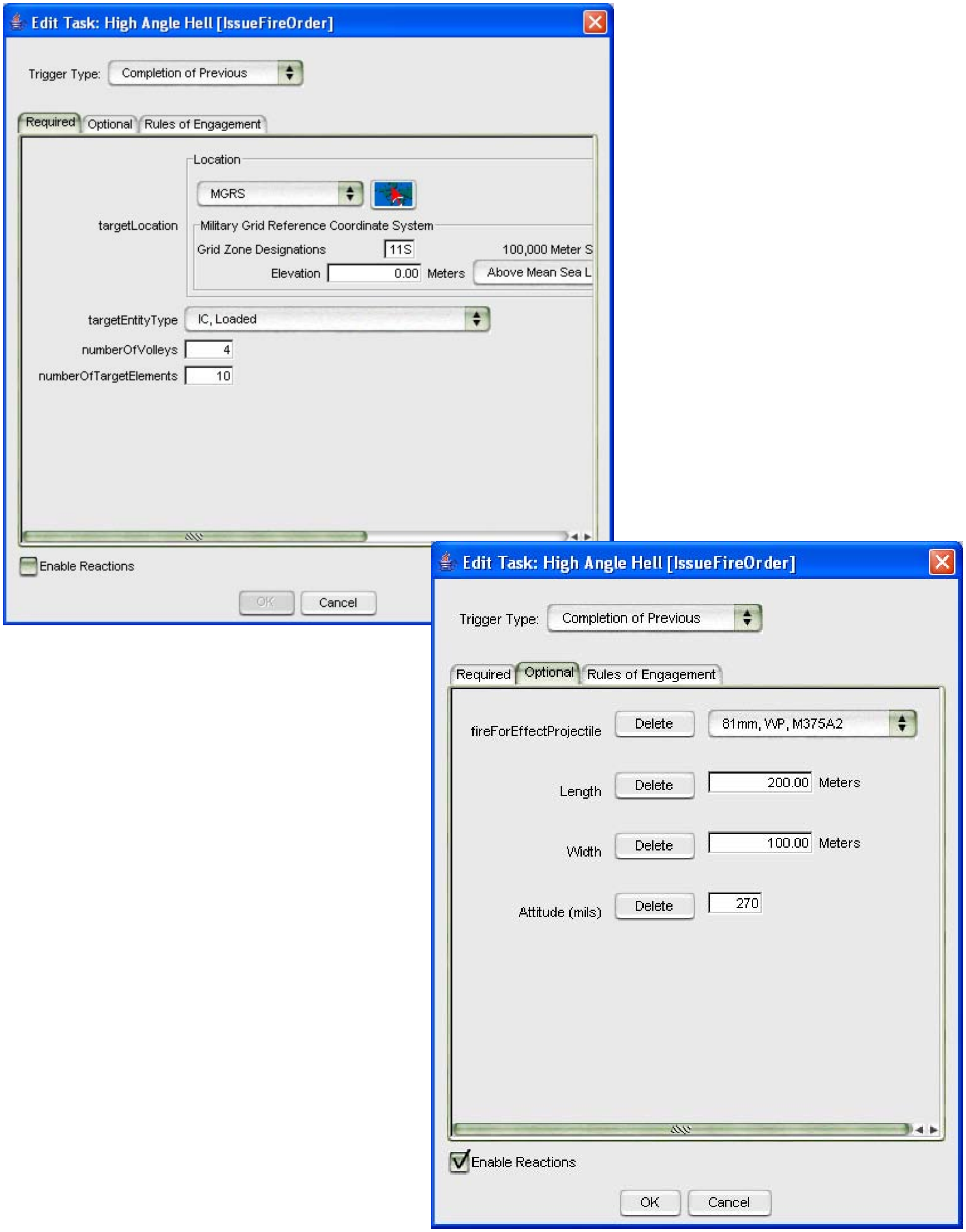
Width: 0.00 Meters

Attitude (mils): 0

☐ Enable Reactions

5. Behaviors

Example



Edit Task: High Angle Hell [IssueFireOrder]

Trigger Type: Completion of Previous

Required
Optional
Rules of Engagement

targetLocation

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 11S

100,000 Meter S

Elevation: 0.00 Meters

Above Mean Sea L

targetEntityType: IC, Loaded

numberOfVolleys: 4

numberOfTargetElements: 10

☐ Enable Reactions

OK
Cancel

Edit Task: High Angle Hell [IssueFireOrder]

Trigger Type: Completion of Previous

Required
Optional
Rules of Engagement

fireForEffectProjectile: 81mm, WP, M375A2

Length: 200.00 Meters

Width: 100.00 Meters

Attitude (mils): 270

Delete
Delete
Delete
Delete

☑ Enable Reactions

5. Behaviors

Occupy Position

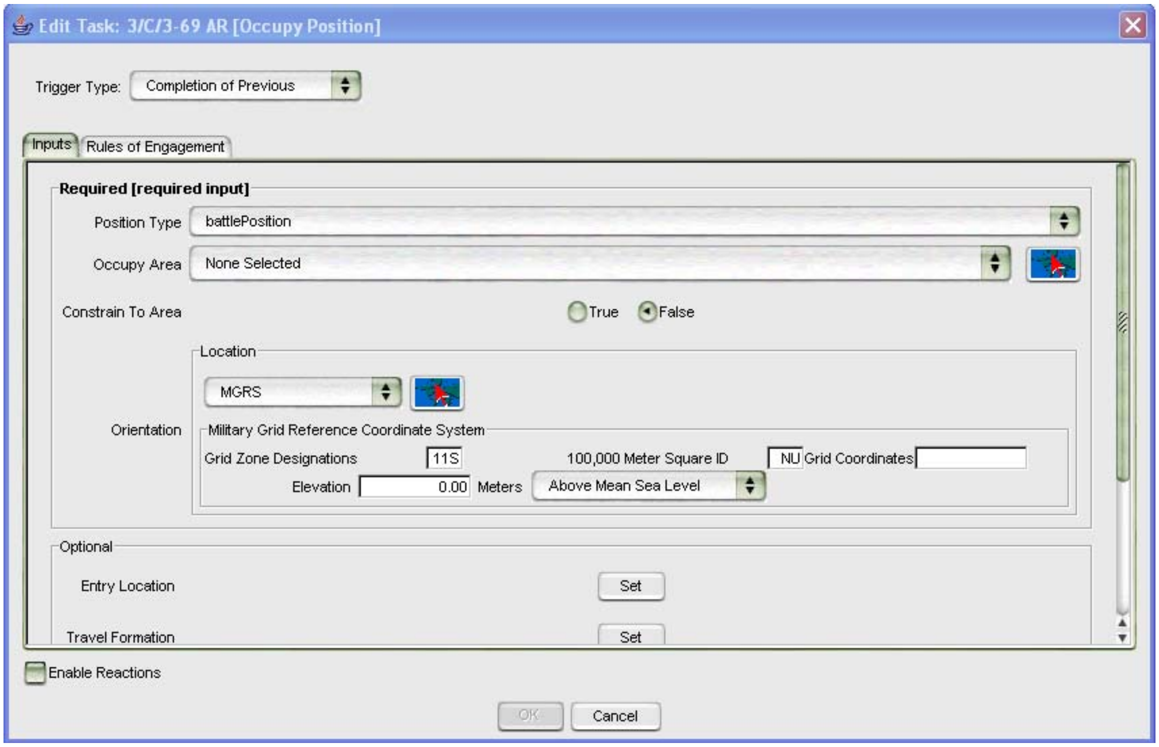
Occupy position is the primary behavior used to occupy an area. Based on the type of mission, the behavior will look for weapon fighting positions, concealed positions, or covered positions. The unit will move through the entry point location before moving to their primary battle positions, if one is provided. If the entry position is not provided, the unit will use the closest point in the area as the entry point. The unit will orient toward the suspected enemy locations.

Behavior Parameters

Input parameters can be used to control types and locations of positions. Pre-drawn control measures are required for the battle position or assembly area. Inputs allow you to constrain movement within the position or out of the position (used in conjunction with enable reactions).

Required Inputs

Occupy Position has four required inputs. The first requires you to select the type of position (Battle Position, Assembly Area, Hasty, or Deliberate) from a drop down list. The second input requires you to select the location from a list of pre-drawn control measures (the point and click method did not work for this behavior). The third input is a selection of either True or False to constrain movement within or out of the position. The last input is to point and click the orientation of the unit once it occupies the position.



Edit Task: 3/C/3-69 AR [Occupy Position]

Trigger Type: Completion of Previous

Required [required input]

Position Type: battlePosition

Occupy Area: None Selected

Constrain To Area: ○ True ● False

Orientation

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 11S

100,000 Meter Square ID: NU

Grid Coordinates:

Elevation: 0.00 Meters Above Mean Sea Level

Optional

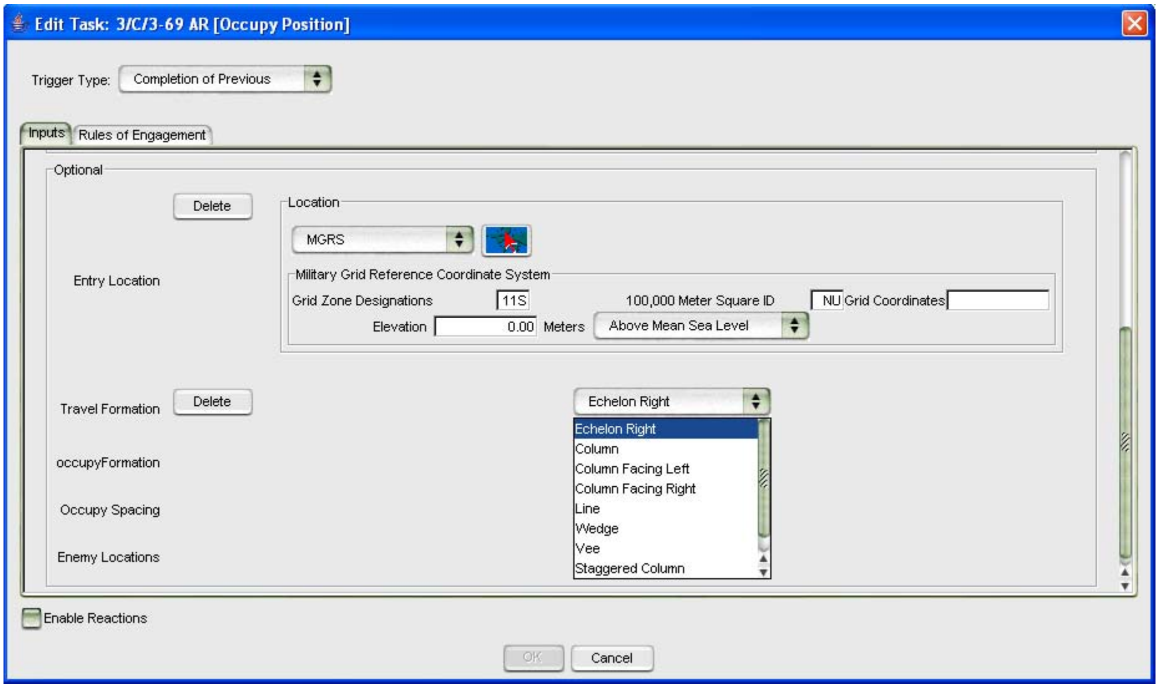
Entry Location

Travel Formation

☐ Enable Reactions

Optional Parameters

There are five optional parameter that allow to define the entry point by the point and click method; the Travel Formation option (again, think Move Tactically) from a drop down list; Occupy Formation (how you want the unit to occupy the position) from a drop down list; Occupy Spacing (how far apart you want the vehicles, entities, or units) by inputting distance; and Enemy Locations (perceived) by the point and click method.



Edit Task: 3/C/3-69 AR [Occupy Position]

Trigger Type: Completion of Previous

Optional

Entry Location

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 11S

100,000 Meter Square ID: NU

Grid Coordinates:

Elevation: 0.00 Meters Above Mean Sea Level

Travel Formation: Echelon Right

occupyFormation

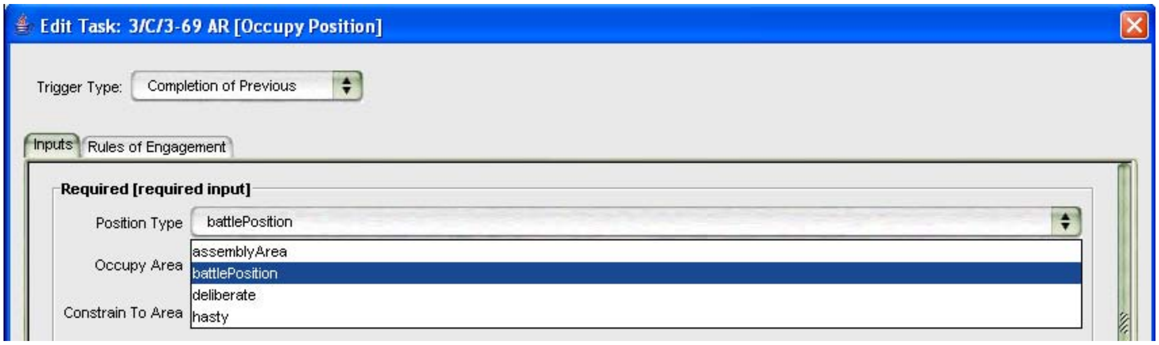
Occupy Spacing

Enemy Locations

Inputs
Rules of Engagement
Delete
Delete
Echelon Right
Column
Column Facing Left
Column Facing Right
Line
Wedge
Vee
Staggered Column
Enable Reactions
OK
Cancel

Example

The example below begins by illustrating the choices of positions available. Battle Position was chosen



Edit Task: 3/C/3-69 AR [Occupy Position]

Trigger Type: Completion of Previous

Required [required input]

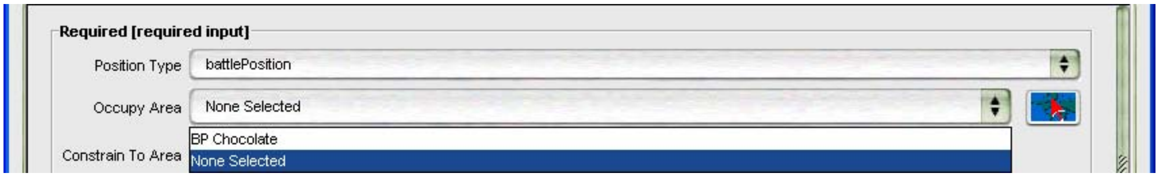
Position Type: battlePosition

Occupy Area

Constrain To Area

Inputs
Rules of Engagement
assemblyArea
battlePosition
deliberate
hasty

The Occupy Area is selected from a pre-drawn area control measure, in this case it was a C2GM Battle Position named BP Chocolate.



Required [required input]

Position Type: battlePosition

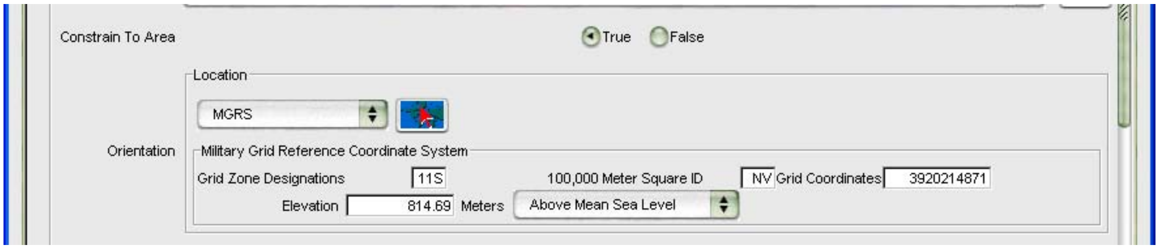
Occupy Area: None Selected

Constrain To Area

BP Chocolate
None Selected

5. Behaviors

The remaining required inputs have been selected to constrain the unit to the Battle Position and to assign them a general direction of orientation using the point and click method.



Constrain To Area ● True ○ False

Orientation

Location: MGRS

Military Grid Reference Coordinate System

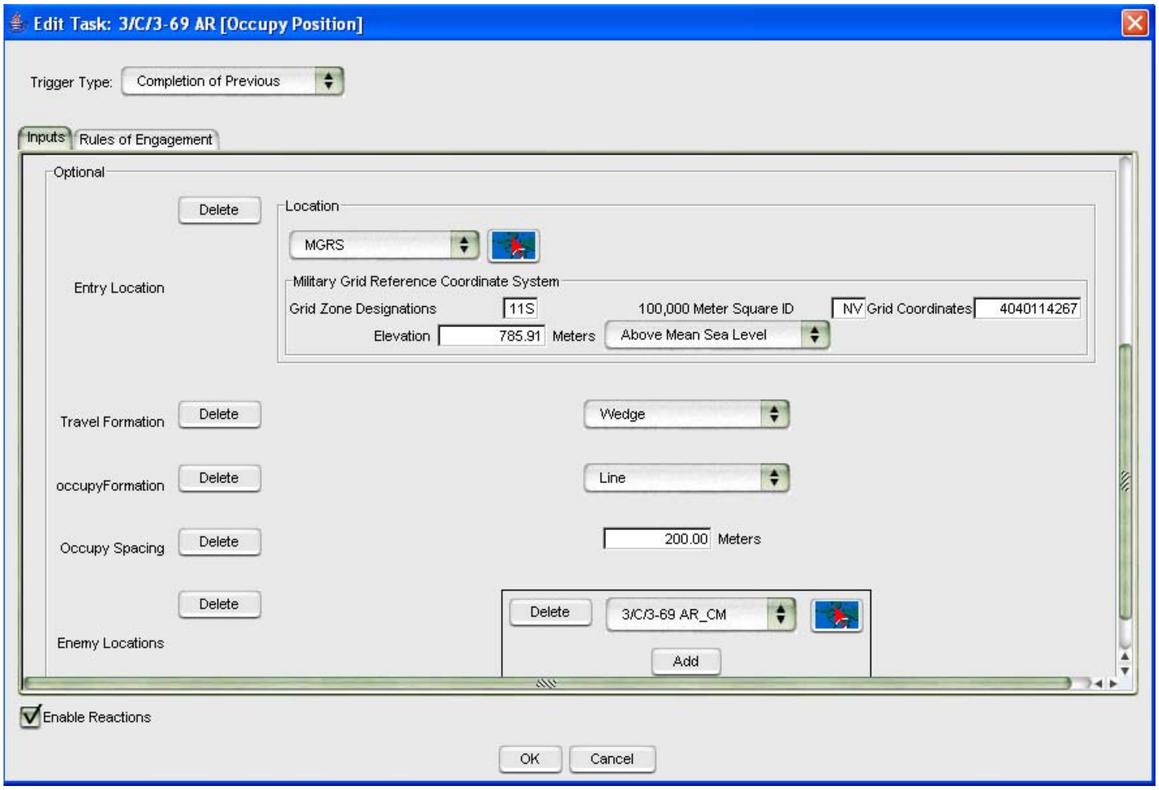
Grid Zone Designations: 11S

100,000 Meter Square ID: NV

Grid Coordinates: 3920214871

Elevation: 814.69 Meters, Above Mean Sea Level

The optional parameters were selected to input more control over the unit. An Entry Location into BP Chocolate was assigned by the point and click method. The unit Travel Formation was selected from the drop down list; Wedge was chosen. The Occupying Formation and Spacing was designated by selecting from a drop down list and inputting the desired distance (200 meters in this case). Finally, using the point and click method, Enemy Locations were designated.



Edit Task: 3/C/3-69 AR [Occupy Position]

Trigger Type: Completion of Previous

Optional

Entry Location

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 11S

100,000 Meter Square ID: NV

Grid Coordinates: 4040114267

Elevation: 785.91 Meters, Above Mean Sea Level

Travel Formation: Wedge

occupyFormation: Line

Occupy Spacing: 200.00 Meters

Enemy Locations: 3/C/3-69 AR_CM

☑ Enable Reactions

Support by Fire

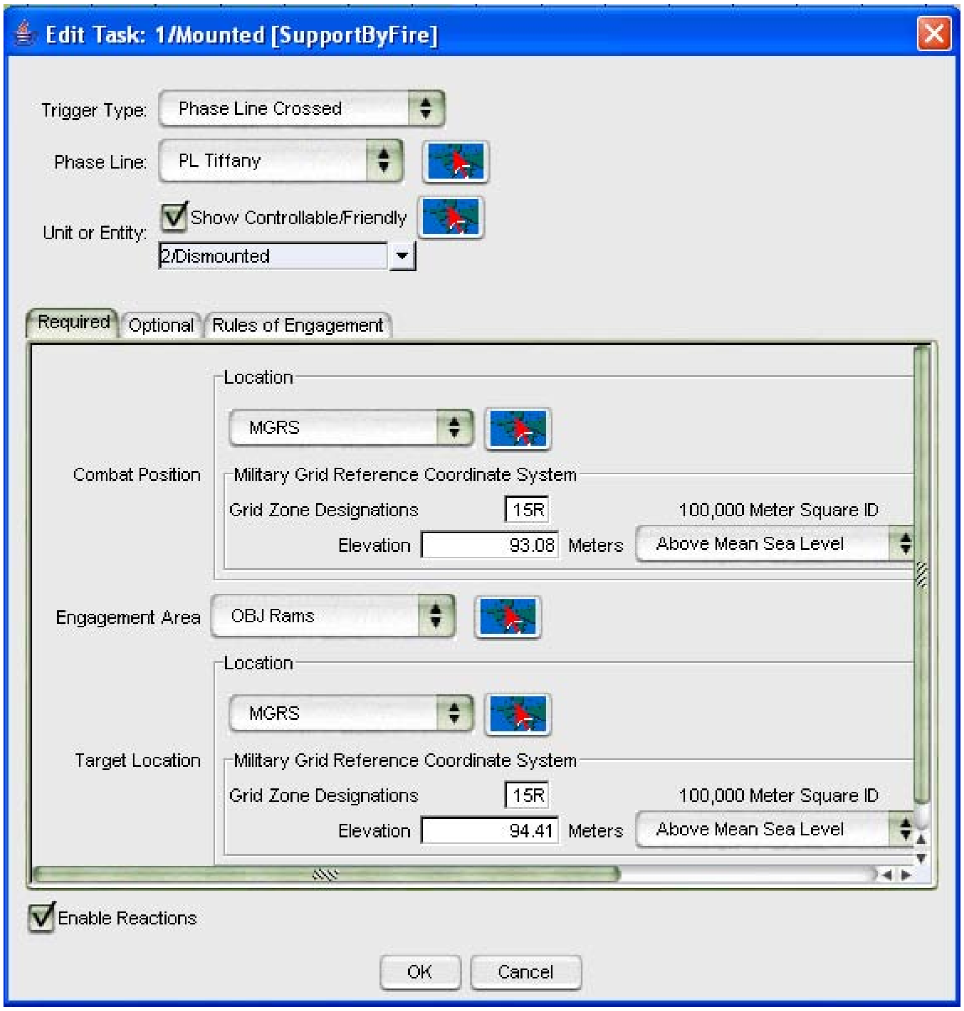
Support by Fire (SBF) is the primary behavior used to facilitate fire and maneuver tasks. This behavior can be assigned to a sub-element of any Platoon sized unit independent of the side relationship.

Behavior Parameters

Input parameters can be used to control various aspects of the support by fire role, including the Combat Position (SBF element location), Engagement Area, specific Target Location (within the engagement area), and Duration of Suppression (length of time the SBF element will fire). In order to assign this behavior you must first draw the Engagement Area. It is not necessary to draw a SBF control measure. However, for operational graphic representation it should be drawn to denote the location of the SBF in addition to drawing in the TRPs.

Required Inputs

SBF has three required parameters that are selected by point and click location methods (Combat Position and Target Location) and selected from a drop down list of pre-drawn or designated control measures (Engagement Area).



Edit Task: 1/Mounted [SupportByFire]

Trigger Type: Phase Line Crossed

Phase Line: PL Tiffany

Unit or Entity: ☑ Show Controllable/Friendly

2/Dismounted

Combat Position

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 15R

100,000 Meter Square ID

Elevation: 93.08 Meters Above Mean Sea Level

Engagement Area: OBJ Rams

Target Location

Location: MGRS

Military Grid Reference Coordinate System

Grid Zone Designations: 15R

100,000 Meter Square ID

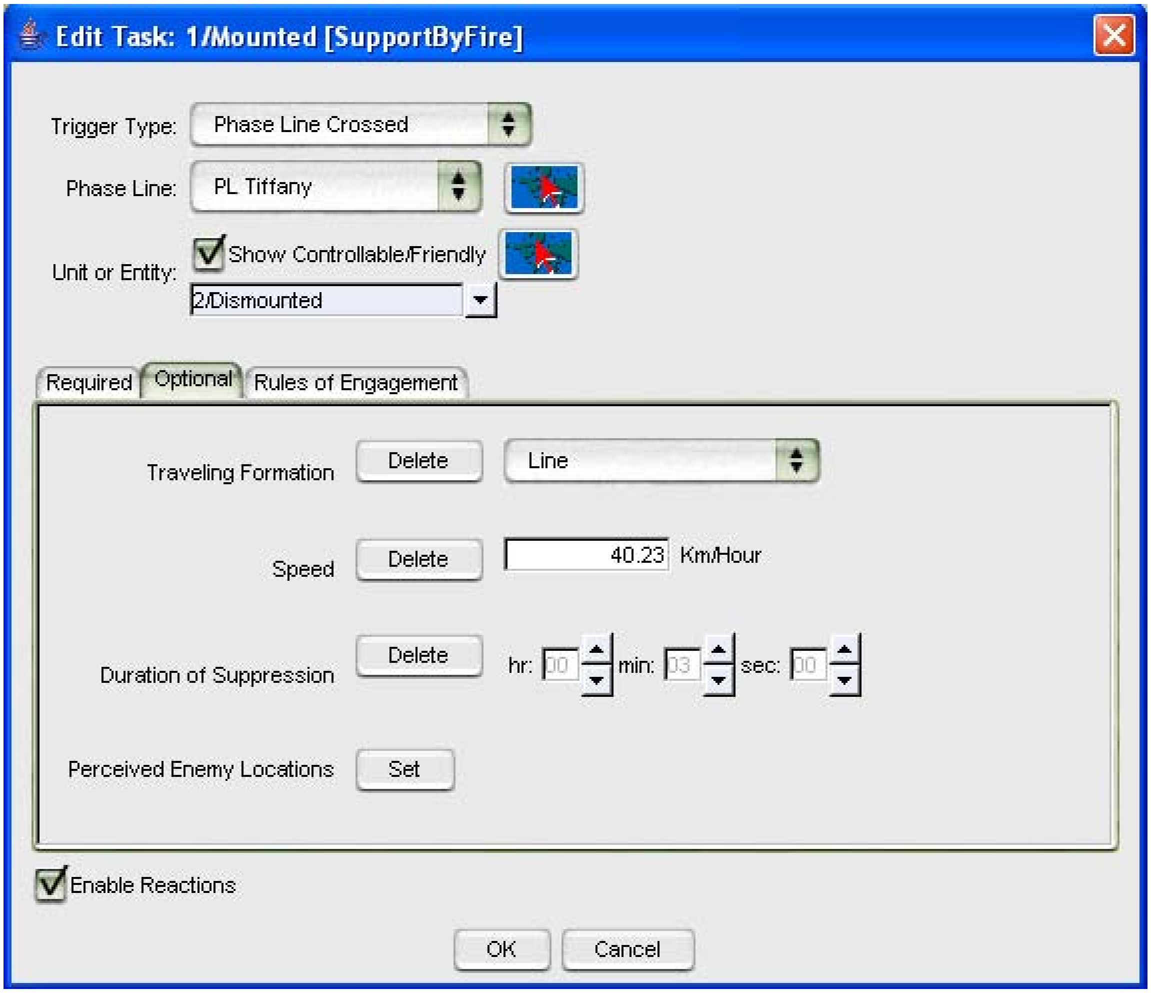
Elevation: 94.41 Meters Above Mean Sea Level

☑ Enable Reactions

5. Behaviors

Optional Inputs

There are four optional inputs for this behavior. The Traveling Formation selected will be the formation the SBF element uses to engage the targets, line or wedge is recommended to allow maximum fire on the objective, and to insure to weapons systems are masked. The Speed relates to how quickly the SBF element arrives at the Combat Position (SBF location). The Duration of Suppression allows you to specify the length of time the SBF element will engage the targets. The Perceived Enemy Locations, in conjunction with the required parameter Target Locations, gives you the opportunity to direct the suppressive fire from the SBF element. If you do not select any of the optional parameters the behavior will complete once the SBF elements have moved to a location near the required “Combat Position” and fire 1 (one) time.


Edit Task: 1/Mounted [SupportByFire]

Trigger Type: Phase Line Crossed

Phase Line: PL Tiffany

Unit or Entity: ☑ Show Controllable/Friendly

2/Dismounted

Traveling Formation: Line

Speed: 40.23 Km/Hour

Duration of Suppression: hr: 00 min: 03 sec: 00

☑ Enable Reactions

Example

The above screen shot depicts an example of a support by fire behavior that requires the mounted element of a Bradley platoon to move to its combat position once the dismounted infantry cross PL Tiffany. The mounted element will move in a line formation at a speed of 40.23 Km/hr. Once they arrive at the combat position they are to lay down suppressive fire on the target location for 3 minutes.

Entity Behaviors

Construct HVIED (Suicide Bomber)

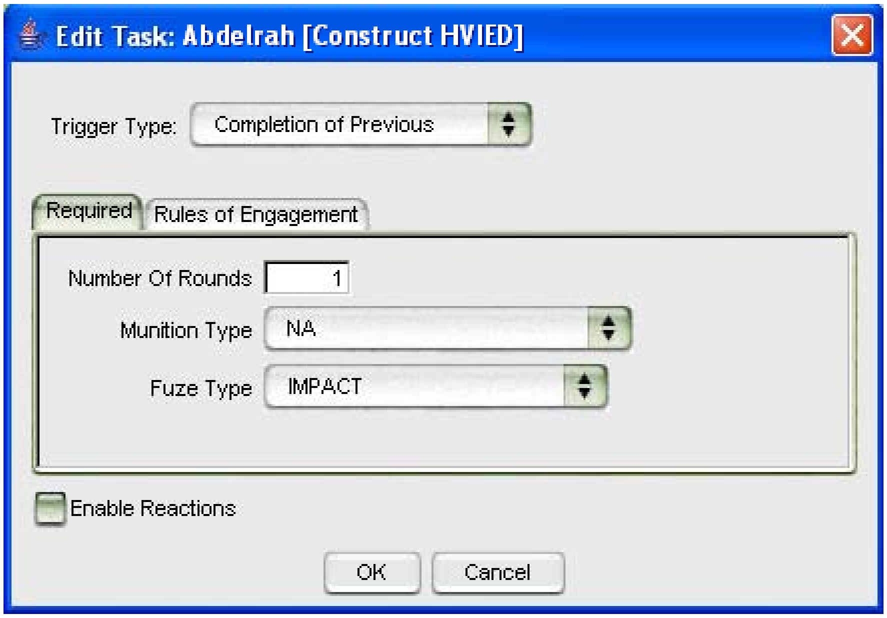
The Construct HVIED behavior is the primary behavior for constructing suicide bombers or car bombs. This behavior requires you to modify an entity's basic load and provide it with the type and amount of explosives desired (see pages 5-21 through 5-23 for steps to add to basic load). It can be issued to a single entity.

Order Parameters

Input parameters can be used to control various aspects of constructing a HVIED, including specifying number of rounds, type of munitions, and type of fuse.

Required Inputs

Constructing a HVIED has 3 required inputs; Number of Rounds, Munitions Type, and Fuse type.



Edit Task: Abdelrah [Construct HVIED]

Trigger Type: Completion of Previous

Number Of Rounds: 1

Munition Type: NA

Fuze Type: IMPACT

☐ Enable Reactions

Optional Inputs

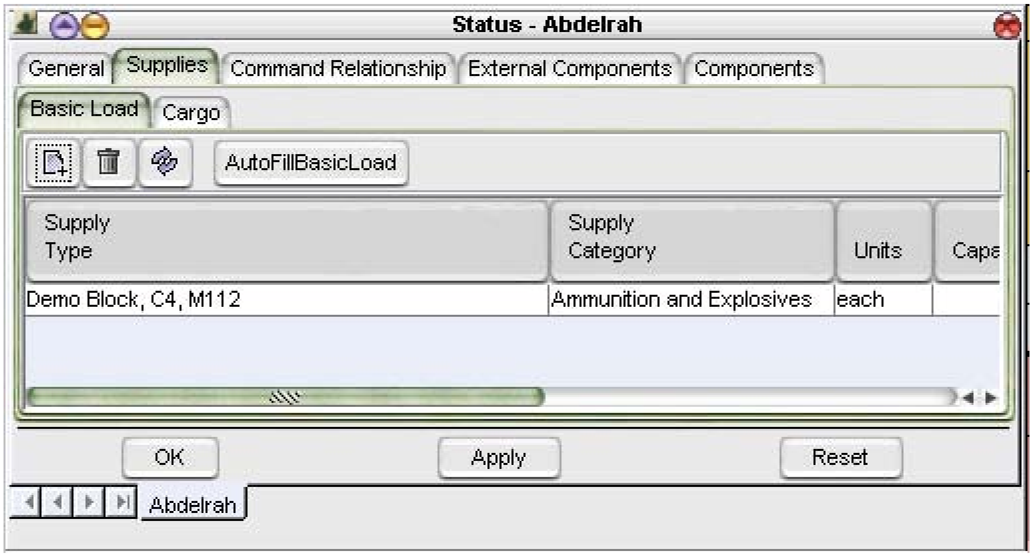
There are no optional inputs for this behavior.

5. Behaviors

Example

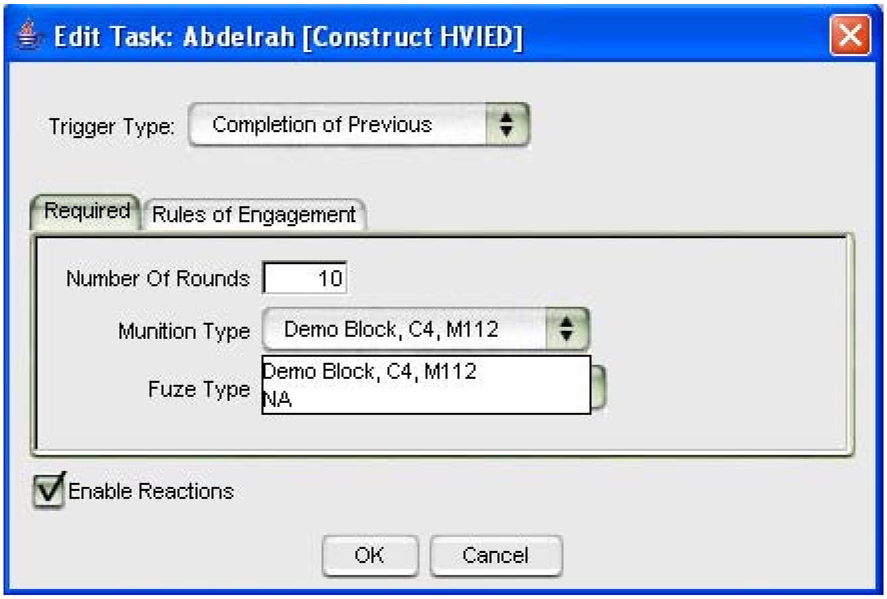
In order to construct an HVIED you must first modify the entity's basic load to include the necessary explosives. Follow the same procedures as in Emplace Minefield pages 5-21 through 5-23.

Abdelrah is an insurgent that will be tasked to be a suicide bomber. His basic load was modified to include 10 blocks of C-4 explosives.


Status - Abdelrah
General
Supplies
Command Relationship
External Components
Components
Basic Load
Cargo
AutoFillBasicLoad
OK
Apply
Reset
Abdelrah

Supply Type	Supply Category	Units	Capa
Demo Block, C4, M112	Ammunition and Explosives	each	

The screen shot below provides an example of constructing a HVIED.


Edit Task: Abdelrah [Construct HVIED]
Required
Rules of Engagement
OK
Cancel

Trigger Type: Completion of Previous

Number Of Rounds 10

Munition Type Demo Block, C4, M112

Fuze Type Demo Block, C4, M112
NA

☑ Enable Reactions

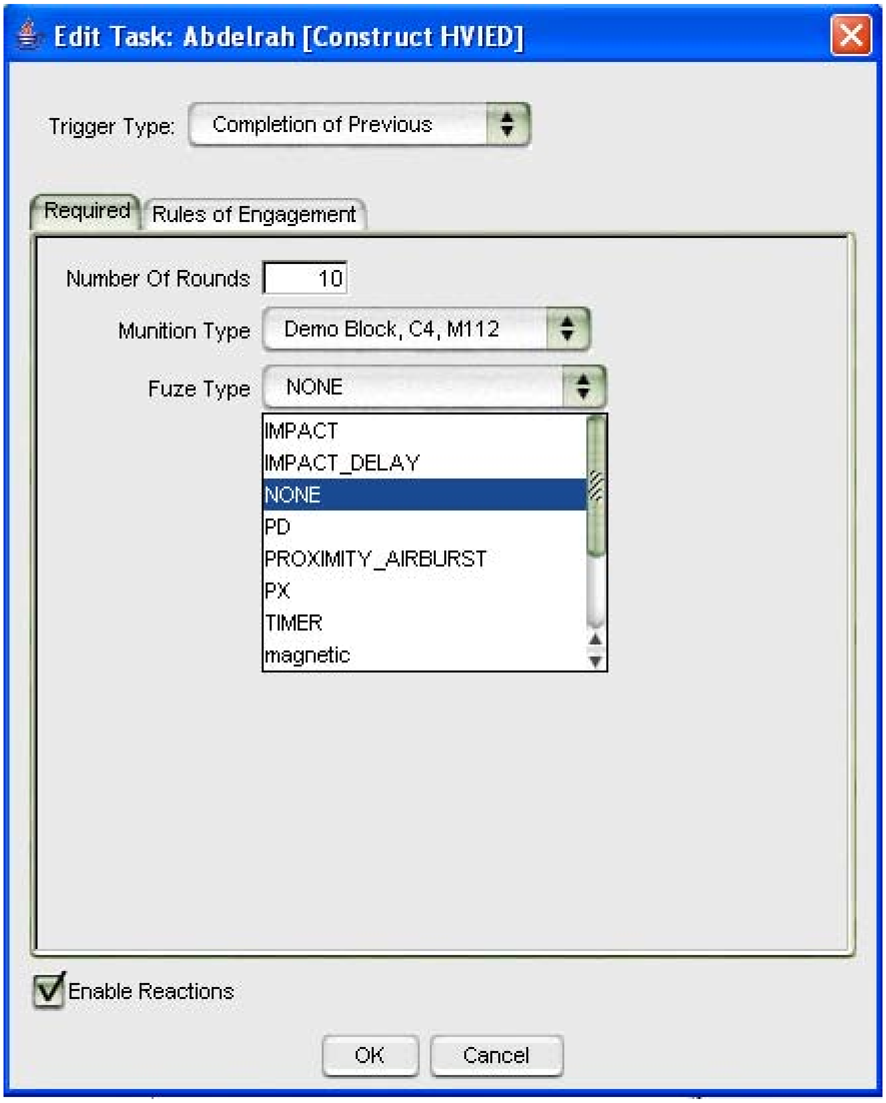
Input the number of rounds you want to use. This number cannot exceed the entities modified basic load.

Select the explosives from the drop down menu (only those explosives in the entity's basic load are displayed)

5. Behaviors

Select fuse type

Normally you would select “None” because the entity will be assigned the “Detonate Self” behavior at the appropriate time; however, there is a drop-down list of fuze types available (these fuze types are available to all demolitions and become appropriate with the type of demolition (mine, nuclear bomb, etc) selected).



Edit Task: Abdelrah [Construct HVIED]

Trigger Type: Completion of Previous

Number Of Rounds 10

Munition Type Demo Block, C4, M112

Fuze Type NONE

☑ Enable Reactions

Required
Rules of Engagement
IMPACT
IMPACT_DELAY
NONE
PD
PROXIMITY_AIRBURST
PX
TIMER
magnetic
OK
Cancel

Detonate Self

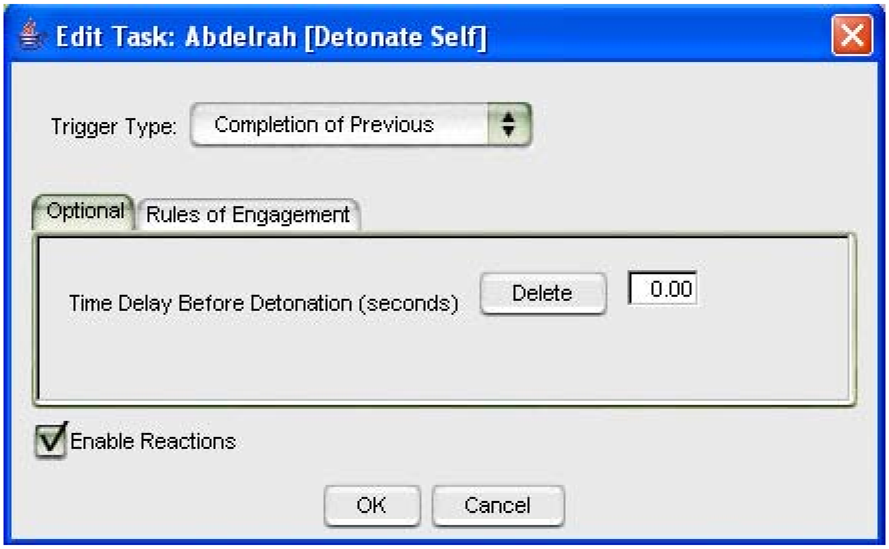
The Detonate Self behavior is the primary behavior for detonating oneself. It can be issued to a single entity.

Order Parameters

Input parameters can be used to control various aspects of detonating oneself, including specifying the time delay before detonation in seconds.

Required Inputs

Detonating Self has no required inputs.



Edit Task: Abdelrah [Detonate Self]

Trigger Type: Completion of Previous

Time Delay Before Detonation (seconds) 0.00

☑ Enable Reactions

Optional Inputs

There is one optional input for this behavior; Time delay before detonation. If no time is entered, then the detonation will be based on the trigger (completion of previous, on command, etc).

Example
See above

Disperse Randomly

The Disperse Randomly behavior is the primary behavior to displace a group of entities (people) around the battlefield. This behavior can be assigned to a single Entity or a group of Entities (Civilian Crowd or Military Unit).

Order Parameters

Input parameters can be used to control various aspects including the dispersal area, destination point, and dispersal radius.

Required Inputs

There are no required inputs for this behavior.

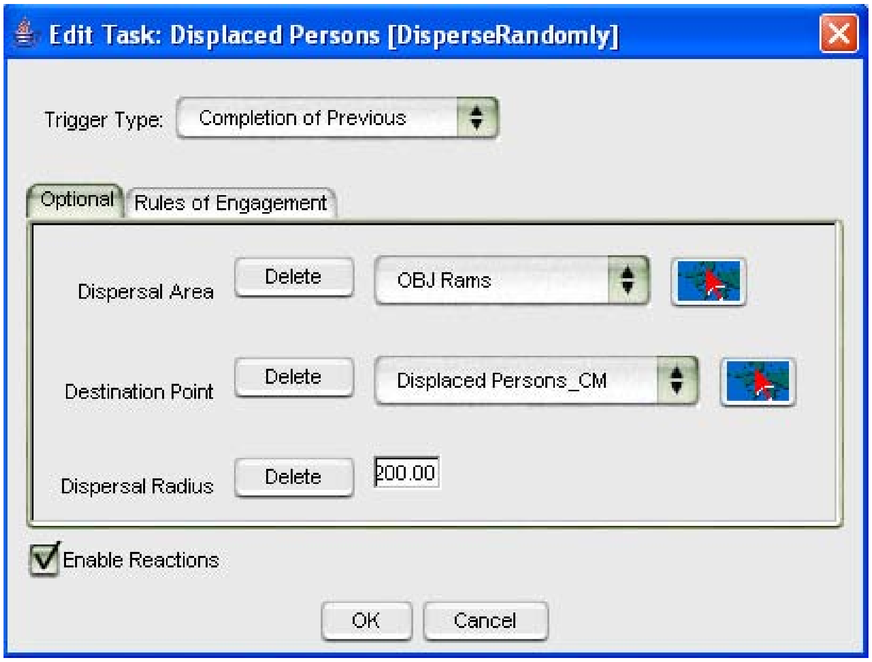
Optional Inputs (even though they are not required, if you do not select these inputs the behavior will automatically finish with no personnel movement)

> **Dispersal area – pre-drawn area using the create palette, or point and click location (if pre-drawn, the dispersal radius becomes moot; the entities will stay within the pre-drawn area).**
>
> **Destination point – point and click location.**
>
> **Dispersal radius – limits the distance the entities will travel within the dispersal area.**

Example

A group of entities (Displaced Persons) were given the behavior to disperse randomly throughout Objective Area Rams. They were to move towards a control measure selected by the point-and-click method, but not to go beyond 200 meters from the original point of placement.

If the dispersal area is smaller than the dispersal radius, the entities will stay inside the dispersal area and disregard the radius. If the dispersal area is extremely large (city market equivalent to 1km x 500m) then the entities will move only the specified distance in the dispersal radius.



Edit Task: Displaced Persons [DisperseRandomly]

Trigger Type: Completion of Previous

Dispersal Area: OBJ Rams

Destination Point: Displaced Persons_CM

Dispersal Radius: 200.00

☑ Enable Reactions

Emplace Explosives

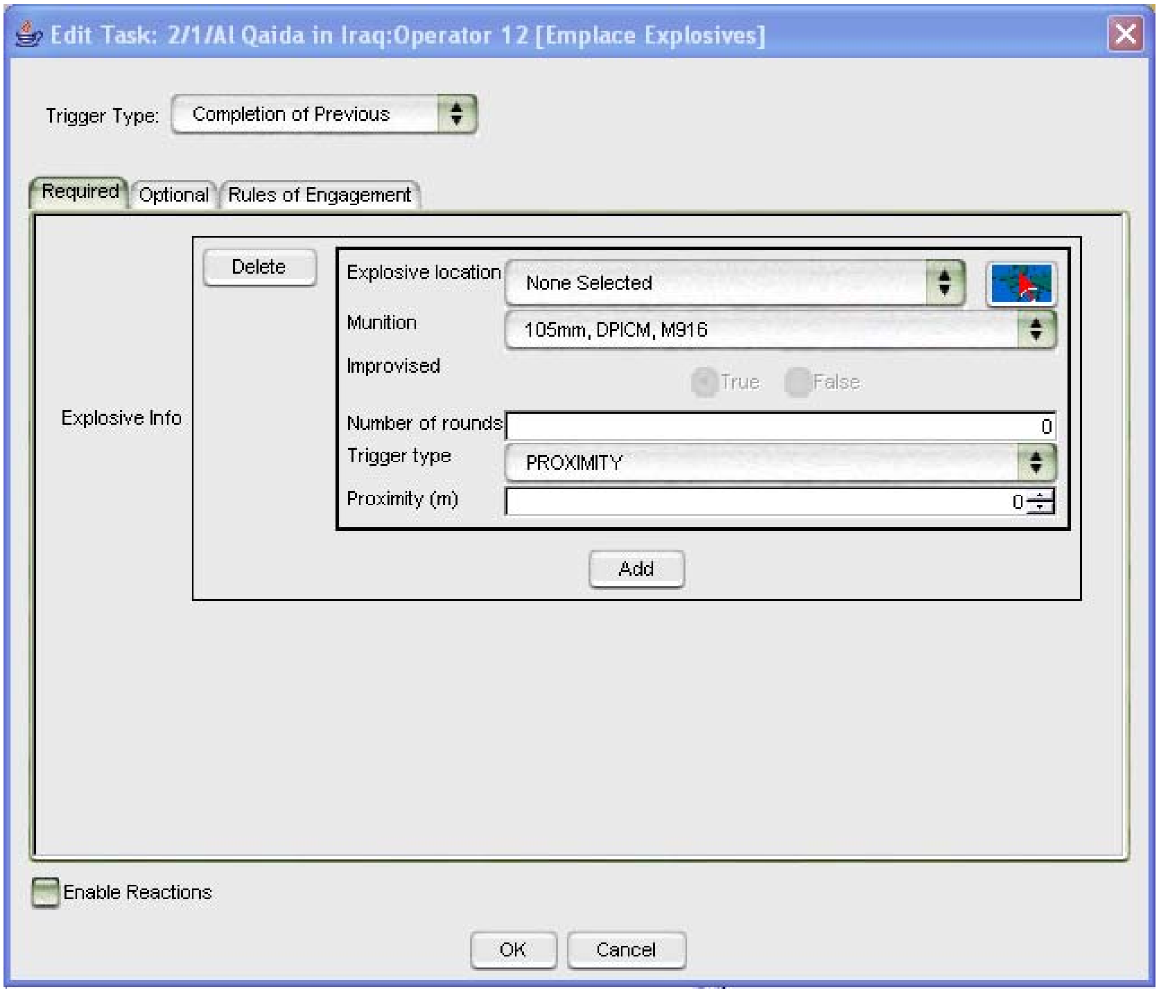
The Emplace Explosives behavior is the primary behavior for emplacing any explosive charge , e.g. improvised explosive devices (IED), breach charge, etc. This behavior requires you to modify an entity's basic load and provide it with the type and amount of explosives desired. The behavior can be assigned to a single entity or a unit.

Order Parameters

Input parameters can be used to control various aspects of emplacing explosives, including specifying where, what type, and how the explosive is detonated. A phase line control measure is required if you plan to use it to trigger the IED.

Required Inputs

Emplace Explosives has five inputs on the Required tab: Explosive location, Munition, Number of Rounds, and Trigger type with description.



Edit Task: 2/1/Al Qaida in Iraq:Operator 12 [Emplace Explosives]

Trigger Type: Completion of Previous

Explosive location: None Selected

Munition: 105mm, DPICM, M916

Improvised: ○ True ○ False

Number of rounds: 0

Trigger type: PROXIMITY

Proximity (m): 0

☐ Enable Reactions

5. Behaviors

Optional Inputs

There is one optional input for Emplace Explosives; Final Destination. This parameter is used to move the emplacing entity/unit away from the explosives site.

Example

Pre-steps: In order to emplace explosives there are a few pre-steps that must be completed. You must choose an entity, or an entity within a unit, to emplace the explosive and then modify its basic load to give it the necessary explosives; additionally, you must pre-draw control measures on the PVD. One of these steps uses the “Place Control Measures on a Map” lesson previously taught in the user guide. The other step is explained below.

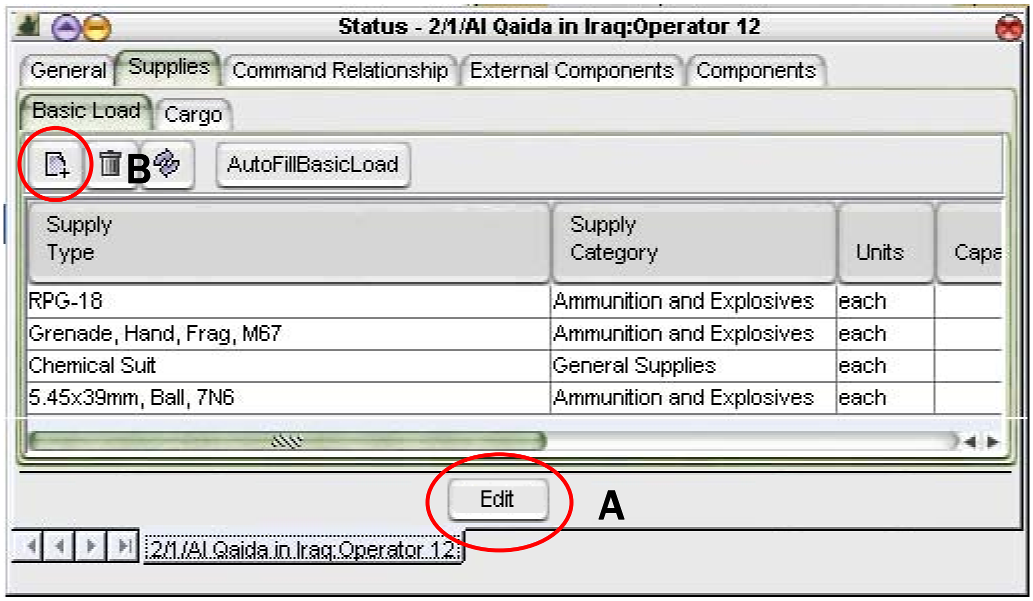
The first set of screen shots demonstrates how to modify an entities basic load to add explosives. The second set of screen shots demonstrates how to emplace those explosives.

First, you must populate the Status window with the entity’s information; we chose Operator 12 from the insurgent group 2/1/Al Qaida in Iraq;

- In the Mission Editor or Task Organization window LC the entity’s name to highlight
- RC the entity’s name to display the pop-up window
- Mouse over Properties and LC

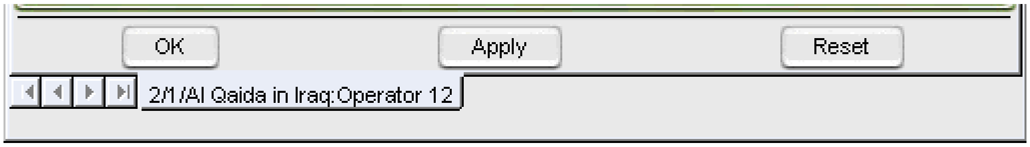
The Status window is now populated with the entity’s information. Next,

LC the “Edit” button **A**
LC “Add Basic Load” button **B**


Status - 2/1/Al Qaida in Iraq:Operator 12
General
Supplies
Command Relationship
External Components
Components
Basic Load
Cargo
B
AutoFillBasicLoad
Edit
A
2/1/Al Qaida in Iraq:Operator 12

Supply Type	Supply Category	Units	Capa
RPG-18	Ammunition and Explosives	each	
Grenade, Hand, Frag, M67	Ammunition and Explosives	each	
Chemical Suit	General Supplies	each	
5.45x39mm, Ball, 7N6	Ammunition and Explosives	each	

Three different buttons will replace the “Edit” button once selected.


OK
Apply
Reset
2/1/Al Qaida in Iraq:Operator 12

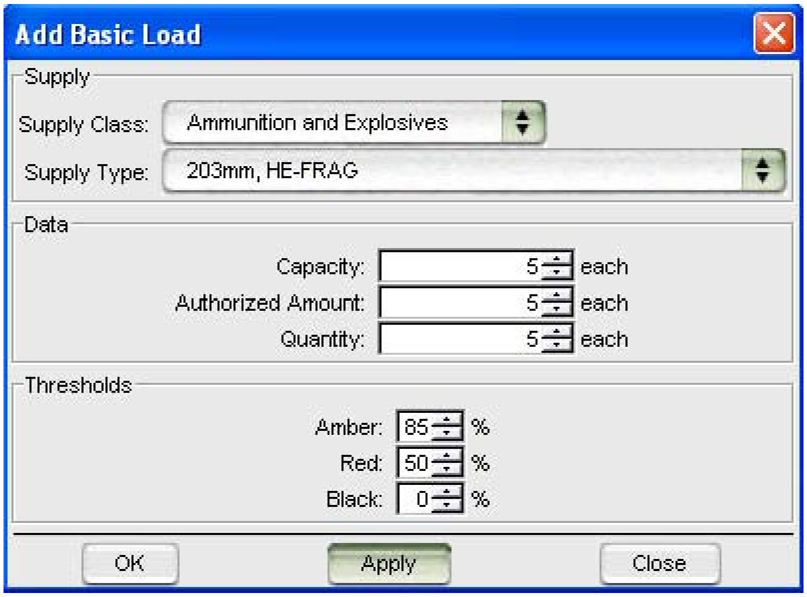
The "Add Basic Load" pop-up window will appear after you have selected the "Add Supply" button.

Use the drop down menus located next to each parameter to select the class and type of supply

Increase the capacity, authorized amount, and quantity in the Data section.

There is no need to alter the Thresholds section.

LC the Apply button
LC the OK button


Add Basic Load

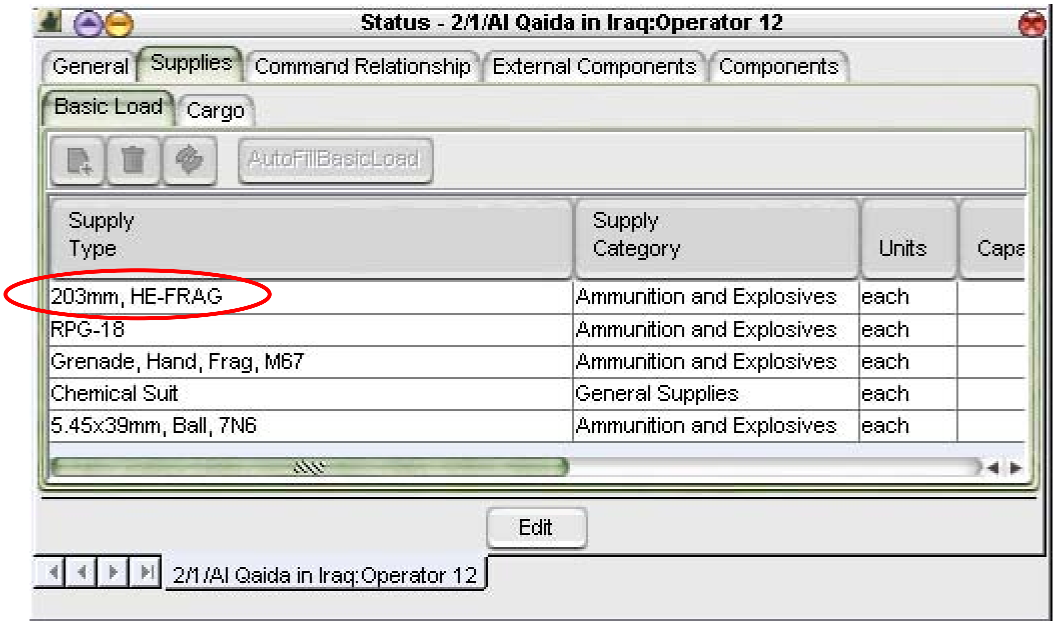
Supply
Supply Class: Ammunition and Explosives
Supply Type: 203mm, HE-FRAG

Data
Capacity: 5 each
Authorized Amount: 5 each
Quantity: 5 each

Thresholds
Amber: 85 %
Red: 50 %
Black: 0 %

OK
Apply
Close

In this example we selected Ammunitions and Explosives as the class of supply, and 203mm, HE-FRAG (High Explosive- Fragmentary) as the type of supply. We gave Operator 12 five of these devices. When complete Operator 12's basic load will look like this:


Status - 2/1/Al Qaida in Iraq:Operator 12

General
Supplies
Command Relationship
External Components
Components
Basic Load
Cargo
AutoFillBasicLoad

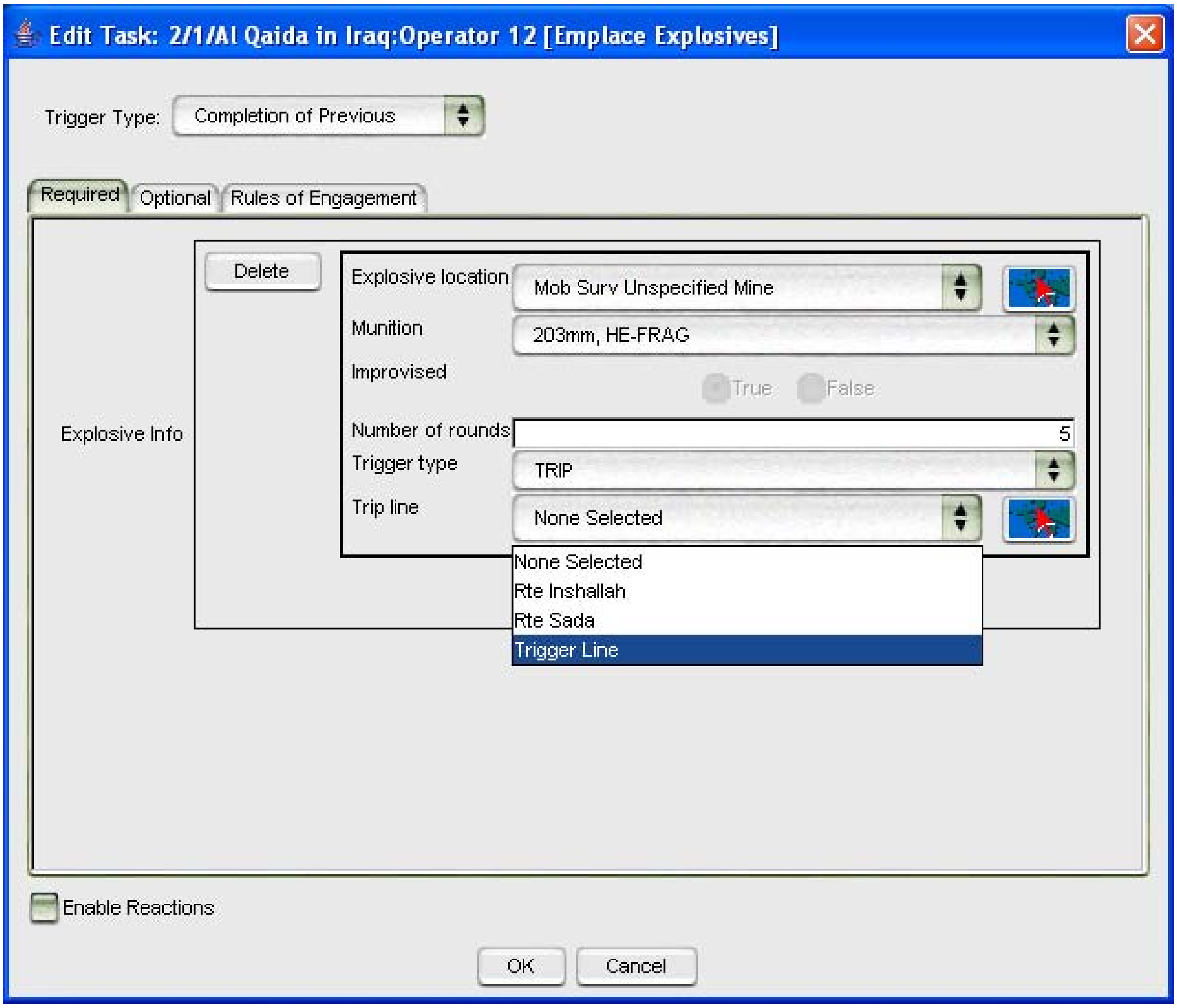
Supply Type	Supply Category	Units	Capa
203mm, HE-FRAG	Ammunition and Explosives	each	
RPG-18	Ammunition and Explosives	each	
Grenade, Hand, Frag, M67	Ammunition and Explosives	each	
Chemical Suit	General Supplies	each	
5.45x39mm, Ball, 7N6	Ammunition and Explosives	each	

Edit
2/1/Al Qaida in Iraq:Operator 12

5. Behaviors

Now that Operator 12 has the desired explosives, you can begin the behavior of emplacing them at the at the IED site.

The screen shot of the Emplace Explosives required tab below provides an example of Operator 12, of Al Qaida, in Iraq being assigned the task.



Edit Task: 2/1/Al Qaida in Iraq:Operator 12 [Emplace Explosives]

Trigger Type: Completion of Previous

Explosive Info

Explosive location: Mob Surv Unspecified Mine

Munition: 203mm, HE-FRAG

Improvised: ○ True ○ False

Number of rounds: 5

Trigger type: TRIP

Trip line: None Selected

☐ Enable Reactions

Required
Optional
Rules of Engagement
Delete
None Selected
Rte Inshallah
Rte Sada
Trigger Line
OK
Cancel

The Explosive Location is designated using the point-and-click method of selection (you have the option of pre-drawing the unspecified mine control measure)

The Munitions is the same 203mm HE-FRAG bomb we gave Operator 12.

All 5 rounds are being used for the IED.

The Trigger type is a pre-drawn phase line labeled “Trigger Line”

Hitch/Unhitch (Magic Hitch/Unhitch)

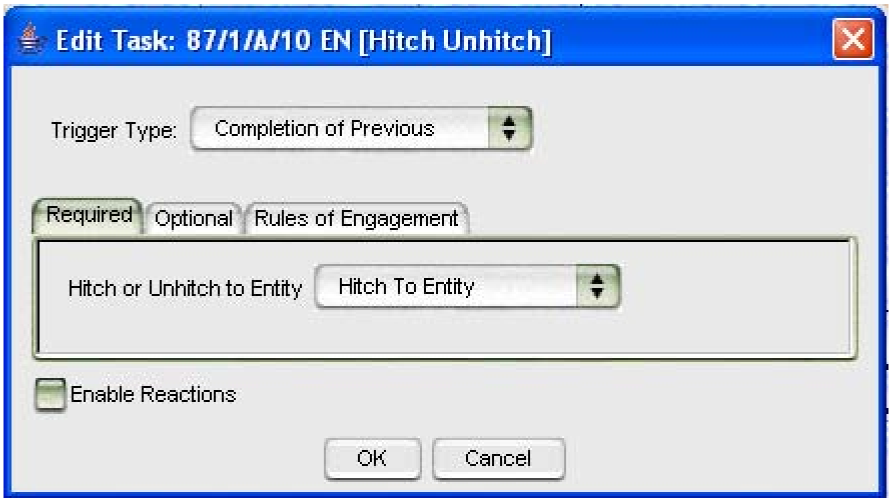
The Hitch/Unhitch behavior is the primary behavior for connecting or disconnecting any trailered device to or from its prime mover. It can be issued to a single entity or a unit. Hitching requires the prime mover to move to the trailer location before hitching (this can be time consuming depending on the locations of the prime mover and the trailer). Unhitching will happen at the prime movers last location before the behavior is executed. (Magic Hitch/Unhitch eliminates any movement of the prime mover and automatically hitches or unhitches the trailer). The steps to assign either set of behaviors are the same.

Order Parameters

Input parameters can be used to control hitching or unhitching and the towing entity or unit. If assigned to a unit (1st Platoon, Alpha Company, 10th Engineers in the example below) then all the units' prime movers will move to there assigned trailers.

Required Inputs

Chose between Hitch or Unhitch to Entity.



Edit Task: 87/1/A/10 EN [Hitch Unhitch]

Trigger Type: Completion of Previous

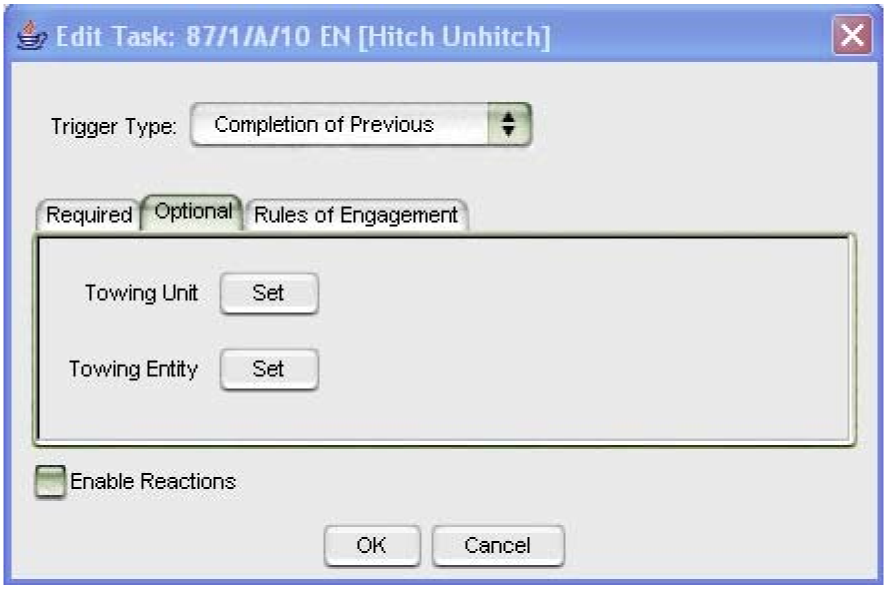
Hitch or Unhitch to Entity: Hitch To Entity

☐ Enable Reactions

Optional Parameters

The optional parameters allow you to specify the prime mover.

Choose the towing unit or entity from a pull down list of elements available in the Task Organization window. If no optional parameters are selected then the prime movers will hitch to their habitual trailers which are built into the entity composers.

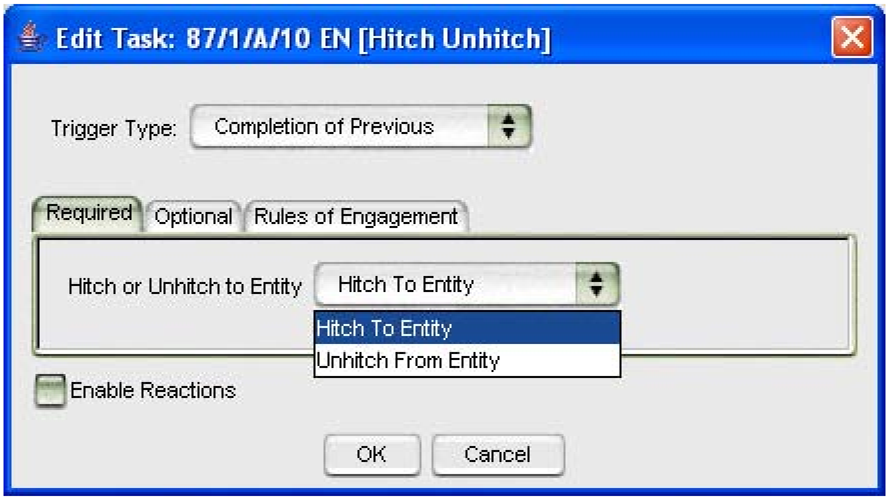

Edit Task: 87/1/A/10 EN [Hitch Unhitch]

Trigger Type: Completion of Previous

Required
Optional
Rules of Engagement
Towing Unit
Set
Towing Entity
Set
Enable Reactions
OK
Cancel

Example

The 1st platoon Alpha Company 10th Engineer Battalion (disregard the “87” it is a system naming anomaly) has to hitch its trailers, water buffalos, MICLICs (Mine Clearing Line Charges), etc to the prime movers prior to beginning a tactical movement.


Edit Task: 87/1/A/10 EN [Hitch Unhitch]

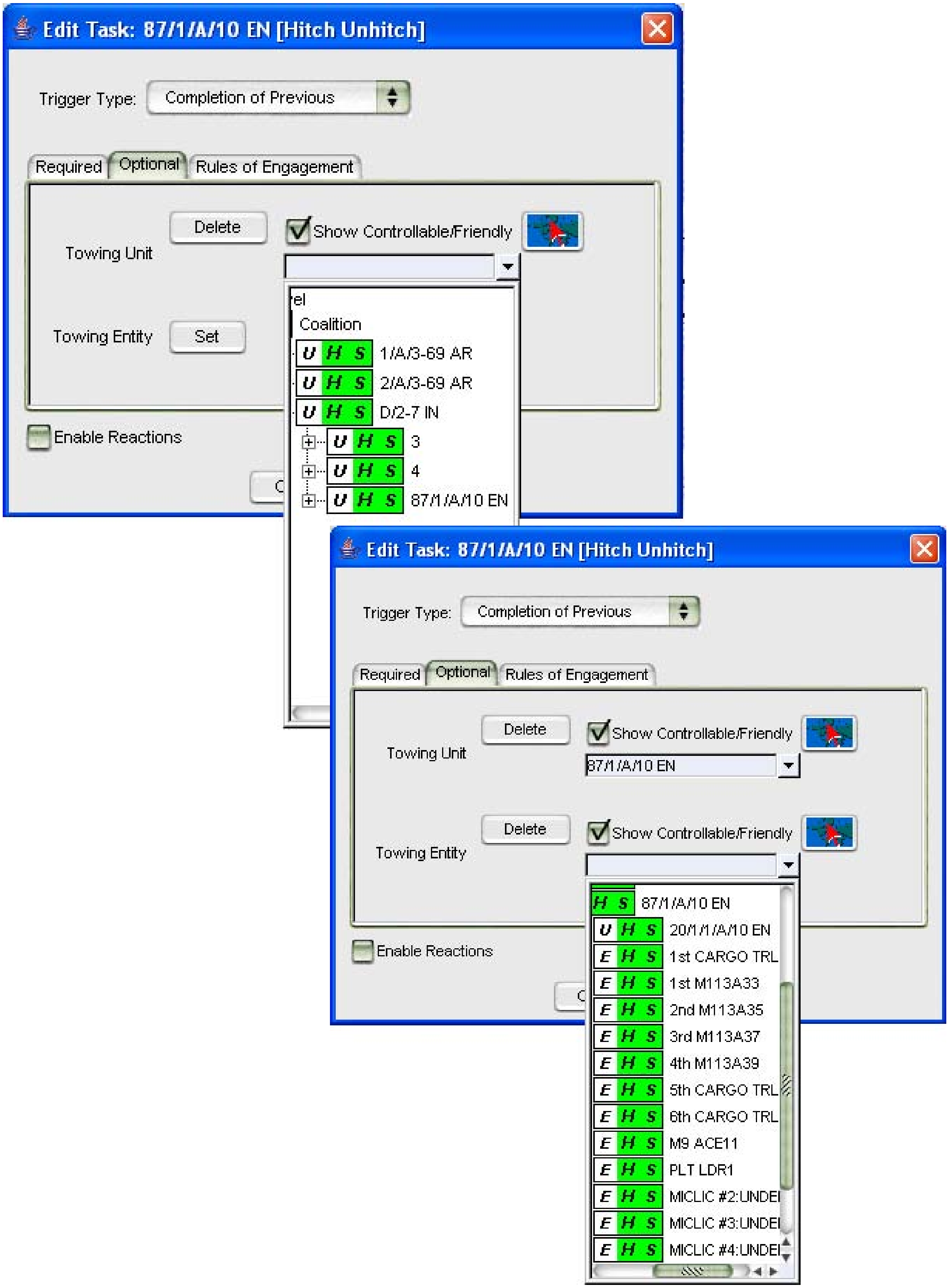
Trigger Type: Completion of Previous

Hitch or Unhitch to Entity: Hitch To Entity

Required
Optional
Rules of Engagement
Hitch To Entity
Unhitch From Entity
Enable Reactions
OK
Cancel

Specifying only the required parameter is enough to execute this behavior. The prime movers will hitch themselves to the trailers that are habitually related to them.

If you desire to break the habitual relationship and specify which prime mover will hitch to what trailer you can specify this in the optional parameters. The example below shows the drop down list allowing you to choose the specific prime movers within a specific unit.



Edit Task: 87/1/A/10 EN [Hitch Unhitch]

Trigger Type: Completion of Previous

Towing Unit: ☑ Show Controllable/Friendly

Towing Entity

- el
  - Coalition
    - U H S 1/A/3-69 AR
    - U H S 2/A/3-69 AR
    - U H S D/2-7 IN
      - U H S 3
      - U H S 4
      - U H S 87/1/A/10 EN

Edit Task: 87/1/A/10 EN [Hitch Unhitch]

Trigger Type: Completion of Previous

Towing Unit: ☑ Show Controllable/Friendly 87/1/A/10 EN

Towing Entity: ☑ Show Controllable/Friendly

- H S 87/1/A/10 EN
- U H S 20/1/1/A/10 EN
- E H S 1st CARGO TRL
- E H S 1st M113A33
- E H S 2nd M113A35
- E H S 3rd M113A37
- E H S 4th M113A39
- E H S 5th CARGO TRL
- E H S 6th CARGO TRL
- E H S M9 ACE11
- E H S PLT LDR1
- E H S MICLIC #2:UNDEI
- E H S MICLIC #3:UNDEI
- E H S MICLIC #4:UNDEI

Mount/Dismount (Magic Mount/Dismount)

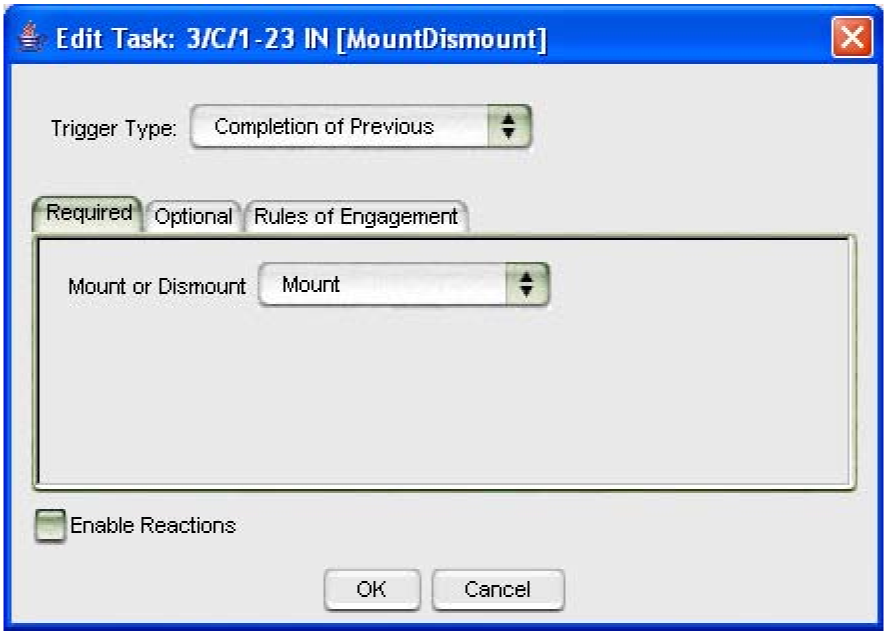
The Mount/Dismount behavior is the primary behavior to get in or out of a vehicle. It can be issued to a single entity or a unit. Mounting requires the ICs to move to the transporting vehicles location (this can be time consuming depending on the locations of the ICs and the transporting vehicle). Dismounting will happen at the transporting vehicles last location before the behavior is executed. (Magic Mount/Dismount eliminates any movement of the ICs and automatically mounts or dismounts them from the transporting vehicle). The steps to assign either set of behaviors are the same.

Order Parameters

Input parameters can be used to control various aspects of mounting or dismounting vehicles, including specifying the vehicle to get in or out of.

Required Inputs

Mount/Dismount has one input on the required tab: Mount or Dismount.



Trigger Type: Completion of Previous

Mount or Dismount: Mount

☐ Enable Reactions

This screen shot depicts the assignment of the behavior to 3rd Platoon, Charlie Company, 1-23 Infantry Battalion. Without any further inputs, this behavior will mount all of the dismounted ICs into the 4 assigned vehicles.

Unfortunately, OneSAFs stochastic design changes which vehicles the ICs mount each time you run the behavior. This does not allow for a simple load plan to match a designed tactical dismount plan.

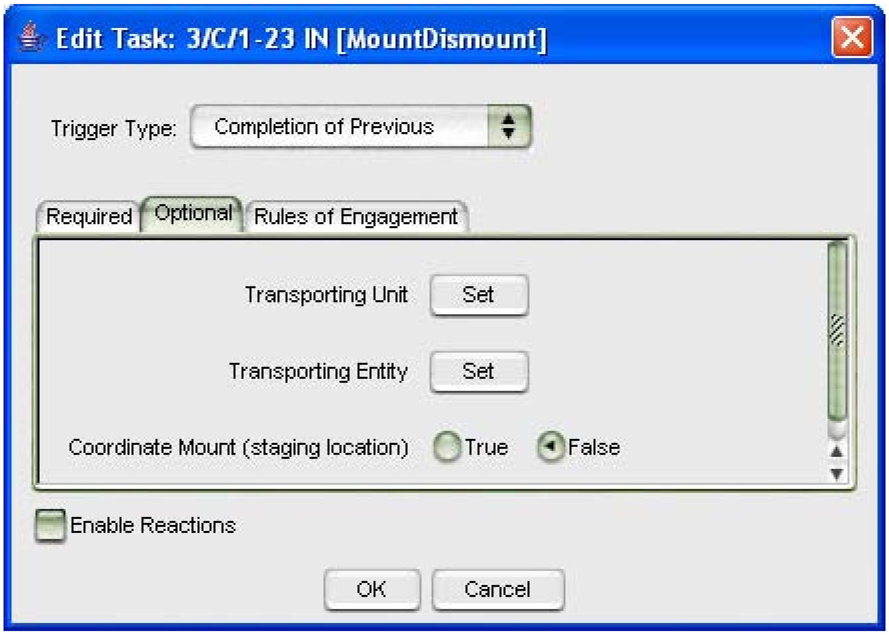
Optional Inputs

There are three optional inputs for the Mount/Dismount behavior. These inputs are not necessary if you are not specifying which entities are going into what vehicle. If you want to mount a specific entity into a specific vehicle you must assign this behavior directly to the entity. The example on the next page describes this in more detail.

Transporting Unit allows you to choose the specific unit to transport the entities or units.

Transporting Entity allows you to choose the specific vehicle to transport the entities or units. The default is the vehicle that has a habitual relationship specified in the entity composer parameters.

Coordinate Mount (True /False) determines who is riding in what vehicle. This is the closest resemblance to designating a load plan for personnel; however, the system changes the passenger manifest each time the behavior is run and I would not recommend using the parameter.


Edit Task: 3/C/1-23 IN [MountDismount]

Trigger Type: Completion of Previous

Coordinate Mount (staging location) ○ True ● False

☐ Enable Reactions

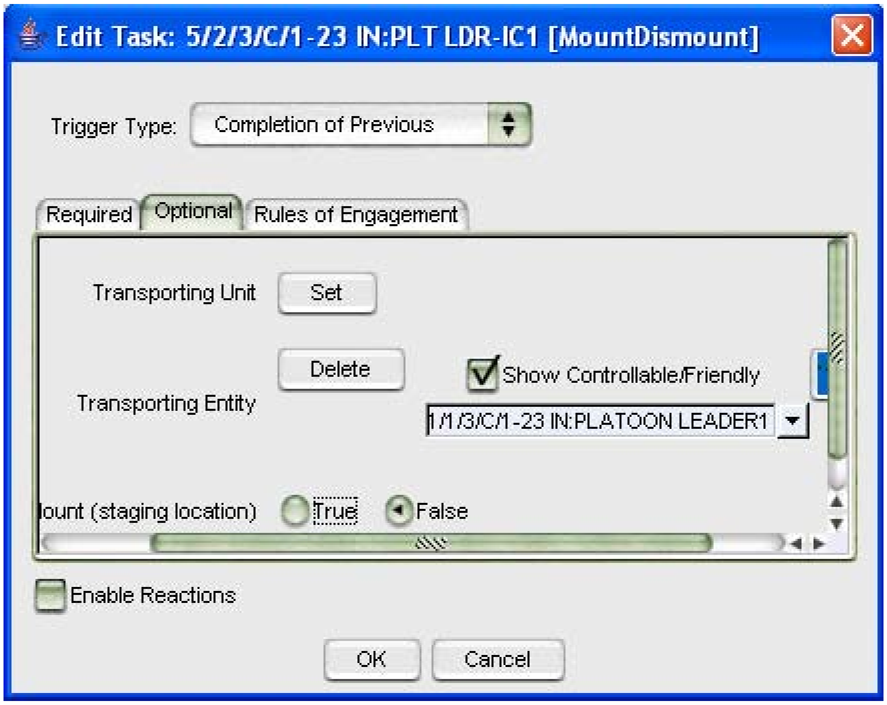
5. Behaviors

Example

The screen shot below provides an example of specifying the selection of the transporting entity/vehicle you want the IC to mount.

In this screen shot we are assigning the behavior to the Platoon Leader of 3rd Platoon, Charlie Company, 1-23 Infantry as identified by the label "PLT LDR-IC1" at the top of the window.

We selected the vehicle label "PLATOON LEADER1" from a drop down menu of all available vehicles. This specifies we want the PLT LDR-IC1 to mount that vehicle.



Edit Task: 5/2/3/C/1-23 IN:PLT LDR-IC1 [MountDismount]

Trigger Type: Completion of Previous

Transporting Entity: 1/1/3/C/1-23 IN:PLATOON LEADER1

☑ Show Controllable/Friendly

ount (staging location) ○ True ● False

☐ Enable Reactions

Required
Optional
Rules of Engagement
Transporting Unit
Set
Delete
OK
Cancel

RWA Move Tactically

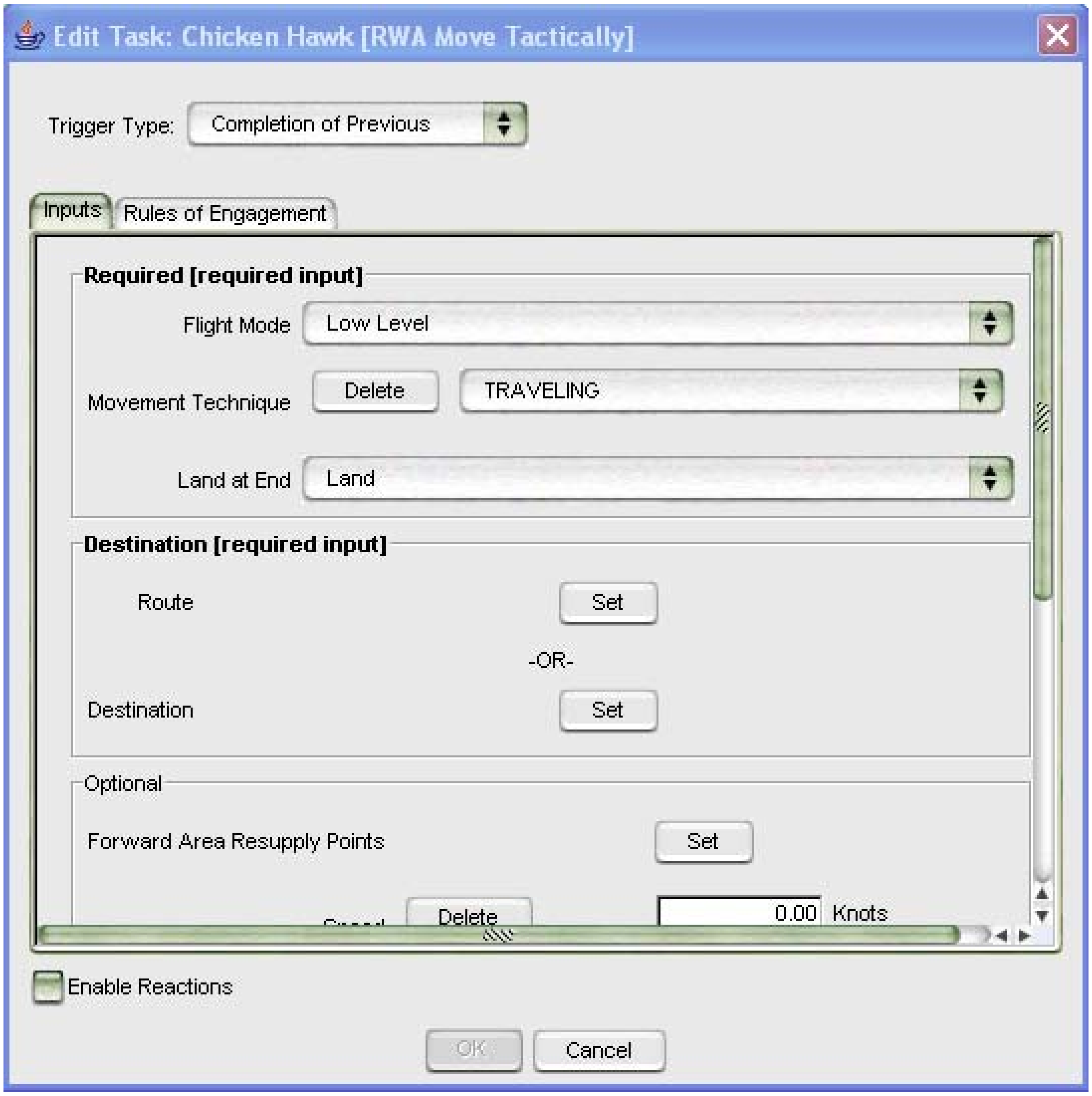
The RWA Move Tactically behavior is the primary behavior to move aircraft (A/C) from one location to another. This behavior requires you to pre-draw routes using the Create Palette to better control the flight route. This behavior can be assigned to either one A/C or a group of A/C.

Order Parameters

Input parameters can be used to control various aspects of the A/C flight, including Flight Mode, Movement Technique, Destination, Speed, Altitude, etc.

Required Inputs

RWA Move Tactically has four required inputs: Flight Mode, Movement Technique, Land at End, and Destination (Route or Destination point).



Edit Task: Chicken Hawk [RWA Move Tactically]

Trigger Type: Completion of Previous

Required [required input]

Flight Mode: Low Level

Movement Technique: TRAVELING

Land at End: Land

Destination [required input]

Route

-OR-

Destination

Optional

Forward Area Resupply Points

0.00 Knots

☐ Enable Reactions

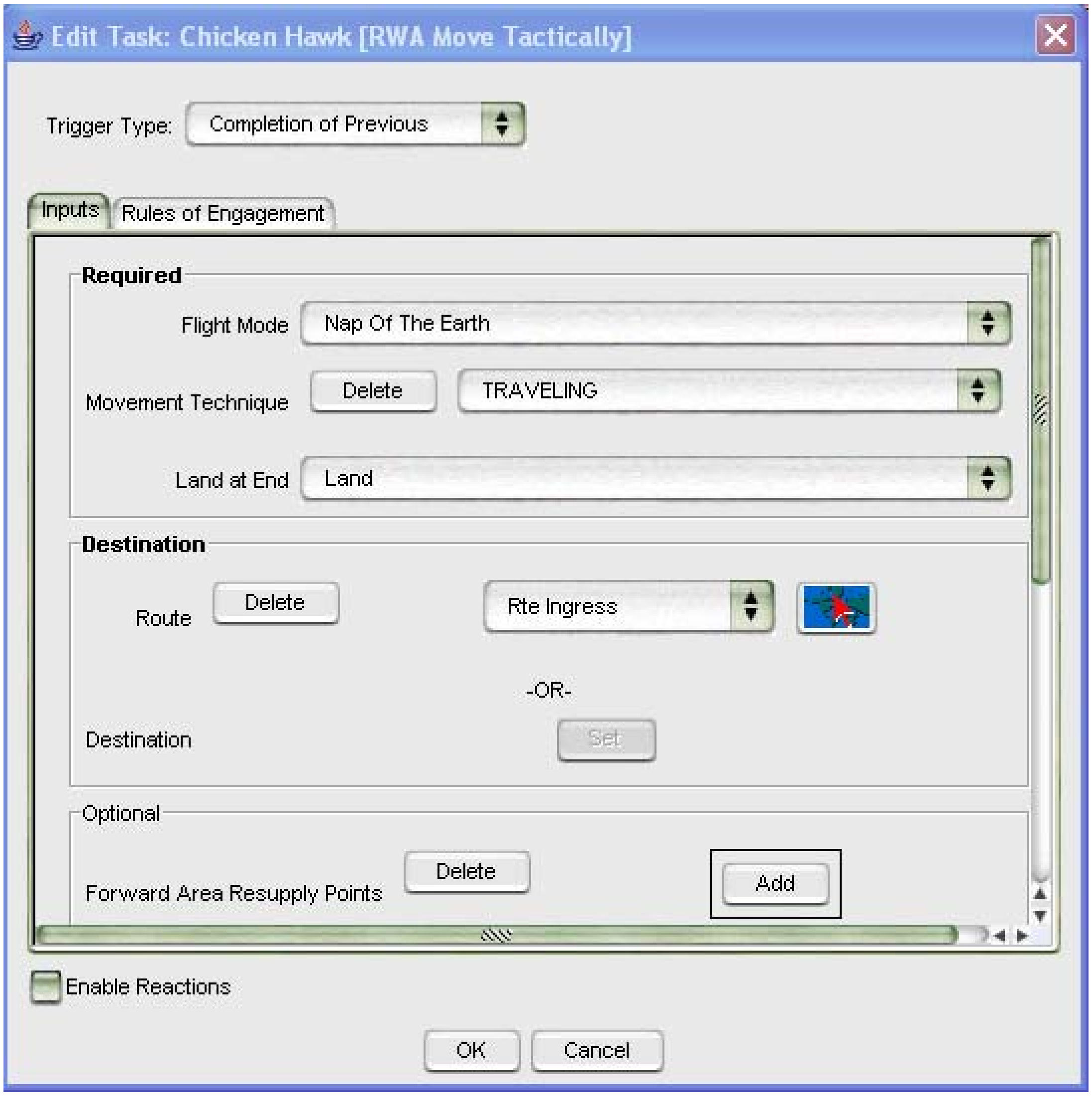
5. Behaviors

Optional Inputs

There are multiple optional inputs for RWA Move Tactically. Each will be described in more detail unless they are self-explanatory.

Example

In order to assign RWA Move Tactically you must first use the Create Palette to pre-draw routes for the A/C to fly. There are several control measures you can choose from (C2 GM AOA Friendly RW, C2 GM Low level transit route, C2 Gm DOA Aviation, and C2 GM ACP (Air Control Point)). However, if you want the A/C to fly a multi-leg route on a single RWA Move Tactically behavior, it is recommended you use the "Route" control measure.



Edit Task: Chicken Hawk [RWA Move Tactically]

Trigger Type: Completion of Previous

Flight Mode: Nap Of The Earth

Movement Technique: TRAVELING

Land at End: Land

Route: Rte Ingress

☐ Enable Reactions

Inputs
Rules of Engagement
Required
Delete
Destination
Delete
-OR-
Destination
Set
Optional
Forward Area Resupply Points
Delete
Add
OK
Cancel

5. Behaviors

Required Parameter choices

Flight Mode

- Altitude – flight path is set at a specific altitude.
- Contour – Flight path is at low altitude which conforms generally and in proximity to the contours of the earth.
- Low Level – Flight path conducted at a selected altitude at which detection and observation of the A/C or of the points which, or to which, it is flying are avoided or minimized.
- Nap of the Earth – Flight path as close to the earth's surface as vegetation and obstacles permit while generally following the contours of the earth's surface.

Movement Technique (self explanatory)

Land at End

- Do not Land – the helicopter will stay motionless at the designated flight altitude until further commands are given
- Land – the helicopter will land at the end of the route even if it has a follow-on mission (it could land in enemy territory)

Destination (self explanatory)

5. Behaviors

Optional Parameter choices

Forward Area Resupply Points – pre-drawn areas the A/C can land at to rearm and refuel if the required equipment and supplies are there.

Speed (self explanatory)

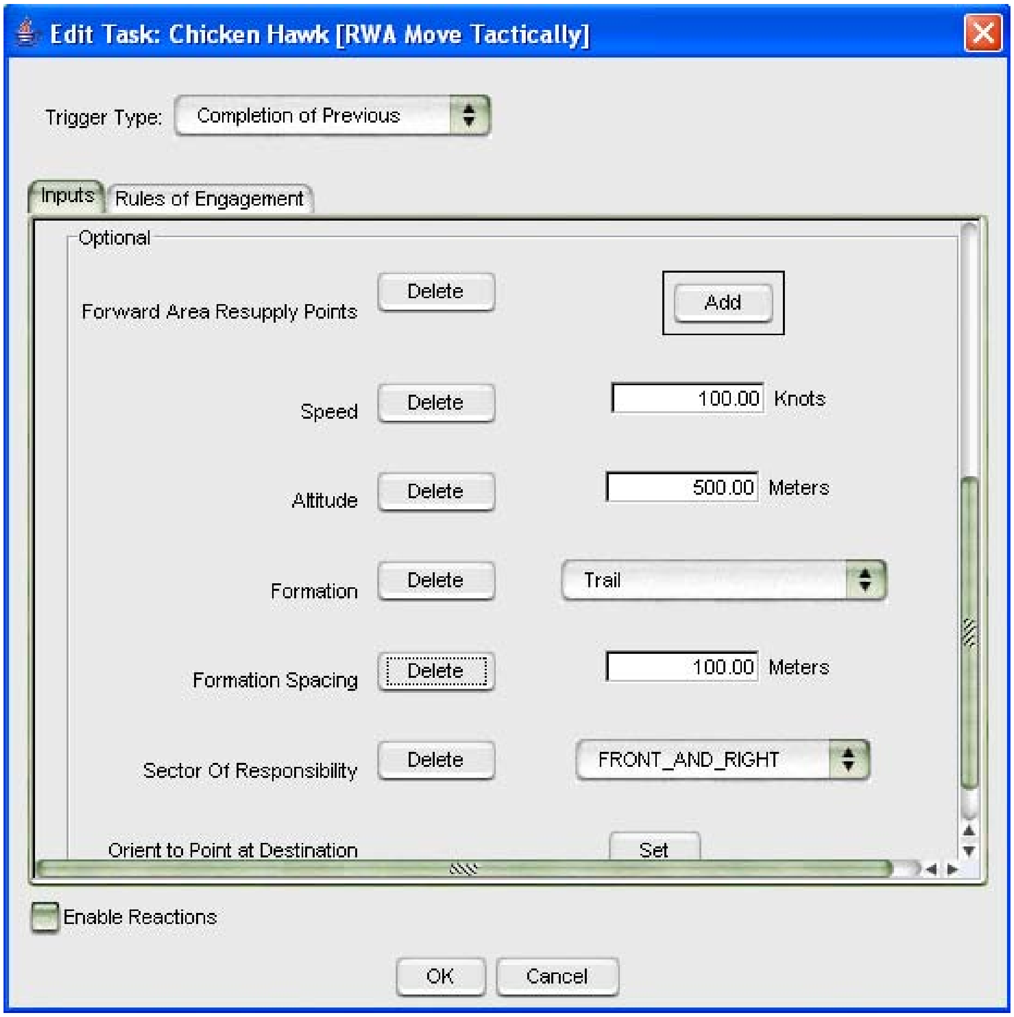
Altitude (self explanatory)

Formation (self explanatory)

Formation Spacing (self explanatory)

Sector of Responsibility – areas of focus for the crews and systems of the A/C in relation to the direction of flight

Orient to Point at Destination – a point and click method of orienting the A/C upon completion of movement.



Edit Task: Chicken Hawk [RWA Move Tactically]

Trigger Type: Completion of Previous

Inputs | Rules of Engagement

Optional

Forward Area Resupply Points — Delete — Add

Speed — Delete — 100.00 Knots

Altitude — Delete — 500.00 Meters

Formation — Delete — Trail

Formation Spacing — Delete — 100.00 Meters

Sector Of Responsibility — Delete — FRONT_AND_RIGHT

Orient to Point at Destination — Set

☐ Enable Reactions

UAV Conduct Surveillance

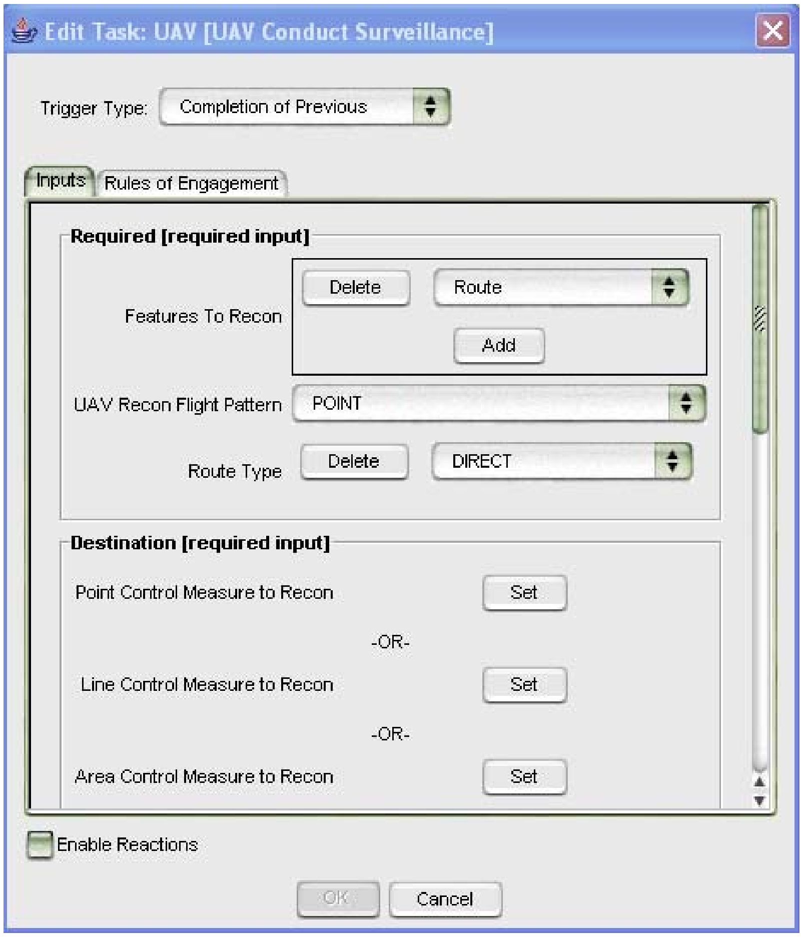
The UAV Conduct Surveillance is the only UAV specific behavior available. This behavior requires you to pre-draw routes and areas using the Create Palette to better control the flight path and area of surveillance. This behavior can be assigned to either one UAV or a group of UAV.

Order Parameters

Input parameters can be used to control various aspects of the UAV flight, including feature to recon, type of flight pattern, and all associated speeds, routes, and altitudes necessary to conduct the surveillance.

Required Inputs

UAV Conduct Surveillance has four required inputs: Features to Recon, UAV Recon Flight Pattern, Route Type, and one of three choices for determining the destination (Point, Line , or Area control measure).



Edit Task: UAV [UAV Conduct Surveillance]

Trigger Type: Completion of Previous

Features To Recon: Route

UAV Recon Flight Pattern: POINT

Route Type: DIRECT

☐ Enable Reactions

Inputs
Rules of Engagement
Required [required input]
Delete
Add
Delete
Destination [required input]
Point Control Measure to Recon
Set
-OR-
Line Control Measure to Recon
Set
-OR-
Area Control Measure to Recon
Set
OK
Cancel

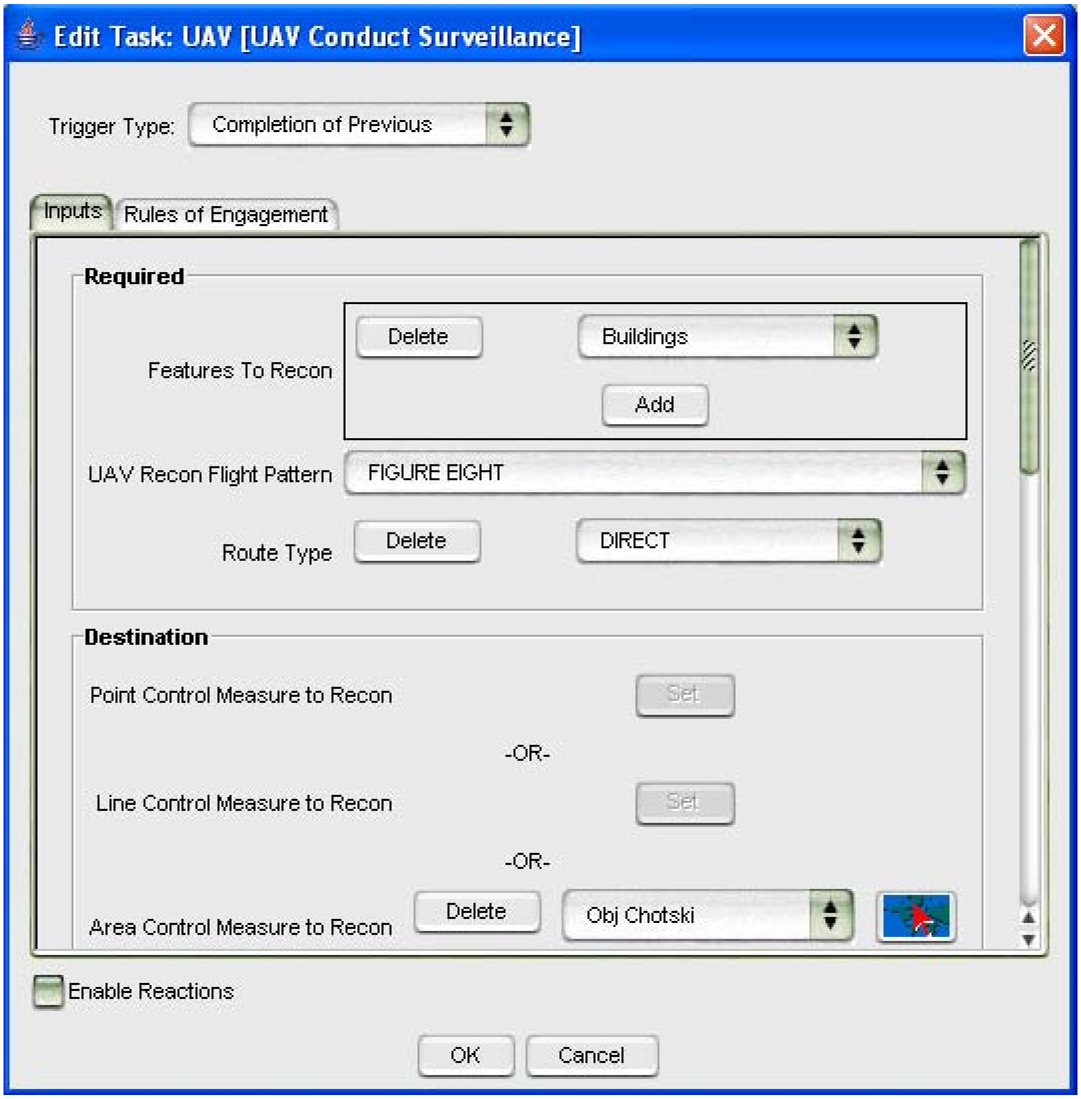
5. Behaviors

Optional Inputs

There are multiple optional inputs for UAV Conduct Surveillance. Each will be described in more detail unless they are self-explanatory.

Example

In order to assign UAV Conduct Surveillance you must first use the Create Palette to pre-draw ingress and egress routes, and a point, line, or area control measure for the destination. It is recommended you use the "Route" control measure for the ingress and egress, and the area control measure for the destination.



Edit Task: UAV [UAV Conduct Surveillance]

Trigger Type: Completion of Previous

Required

Features To Recon: Buildings

UAV Recon Flight Pattern: FIGURE EIGHT

Route Type: DIRECT

Destination

Point Control Measure to Recon

-OR-

Line Control Measure to Recon

-OR-

Area Control Measure to Recon: Obj Chotski

☐ Enable Reactions

Required Parameter choices

Features to Recon – selected from a drop down menu of features built into the terrain database.
UAV Recon Flight Pattern – selected from a drop down menu of 4 flight patterns.
Route Type – selected from a drop down menu of 7 route types.

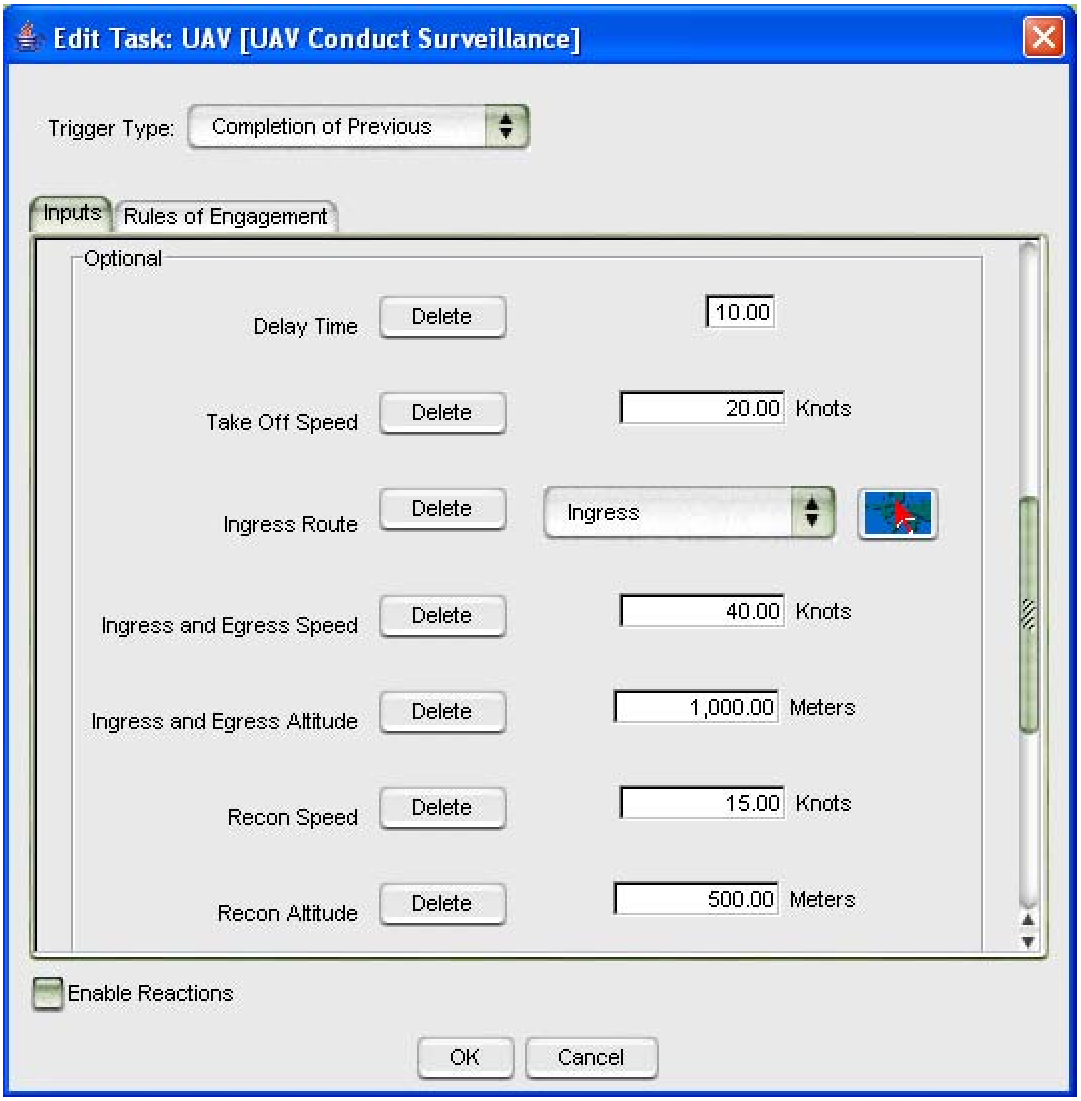
5. Behaviors

Destination – selected from a drop down menu of pre-drawn control measures, or point and click the location.

Optional Parameter choices

> **Delay Time- specifies the amount of delay before the launch of the UAV**

The remaining parameters on this screen are self-explanatory.



Edit Task: UAV [UAV Conduct Surveillance]

Trigger Type: Completion of Previous

Optional

Delay Time: 10.00

Take Off Speed: 20.00 Knots

Ingress Route: Ingress

Ingress and Egress Speed: 40.00 Knots

Ingress and Egress Altitude: 1,000.00 Meters

Recon Speed: 15.00 Knots

Recon Altitude: 500.00 Meters

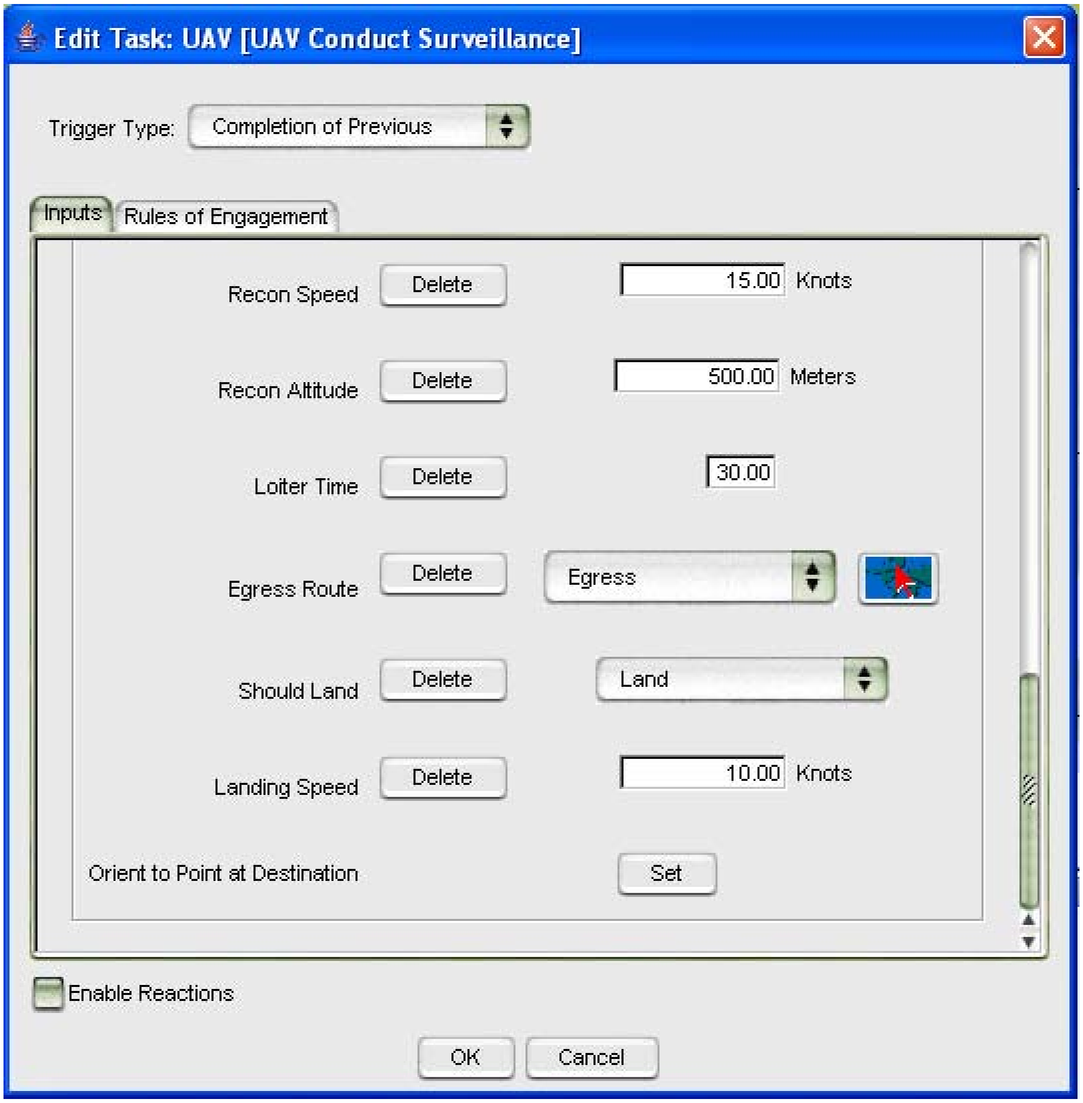
☐ Enable Reactions

5. Behaviors

This screen shot shows the remaining optional parameters

Loiter Time – this parameter determines the amount of time the UAV spends over the surveillance area.

The remaining parameters on this screen shot are self-explanatory.



Edit Task: UAV [UAV Conduct Surveillance]

Trigger Type: Completion of Previous

Recon Speed: 15.00 Knots

Recon Altitude: 500.00 Meters

Loiter Time: 30.00

Egress Route: Egress

Should Land: Land

Landing Speed: 10.00 Knots

Orient to Point at Destination

☐ Enable Reactions

Unconventional Infiltration

The Entity Unconventional Infiltration is the primary behavior to move an enemy entity (person) around on the battlefield to its destination point without being compromised. This behavior can be assigned to any Entity independent of the side relationship. All of the variances in speed, angular offset, and length help to depict the randomness of movement.

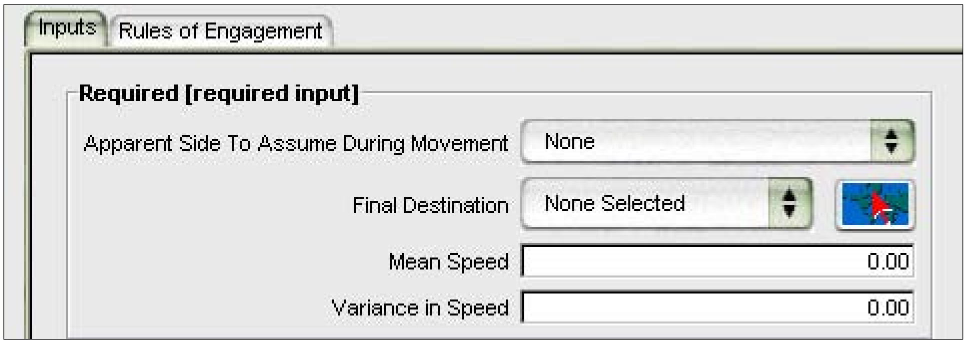
Order Parameters

Input parameters can be used to control various aspects of the infiltration, including the side relationship to masquerade as, variance of route in azimuth and distance and location at the end of the movement.

Required Inputs

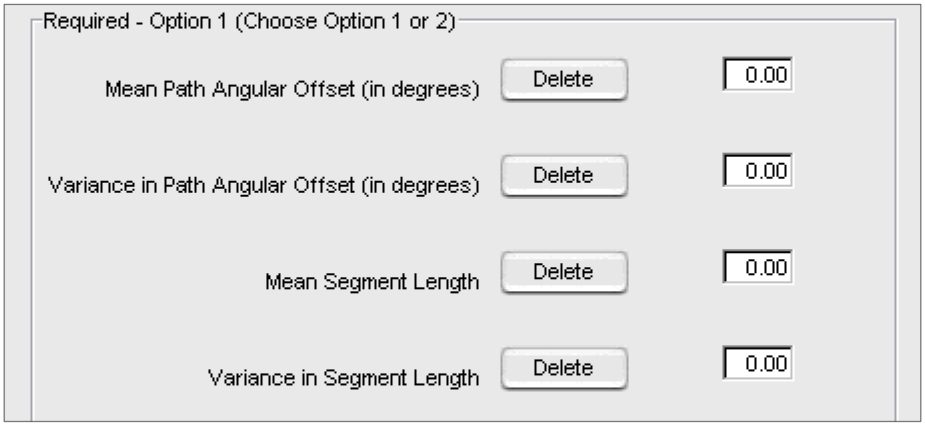
Unconventional Infiltration has five to nine required inputs:

Apparent side to assume during movement – hides true identity from other sides in scenario. You choose from the sides listed in the scenario' task organization.
Final destination – point and click to determine location.
Mean speed – average speed of movement.
Variance in speed – increases or decreases the speed of movement by inputted variance



Required [required input]
Apparent Side To Assume During Movement: None
Final Destination: None Selected
Mean Speed: 0.00
Variance in Speed: 0.00

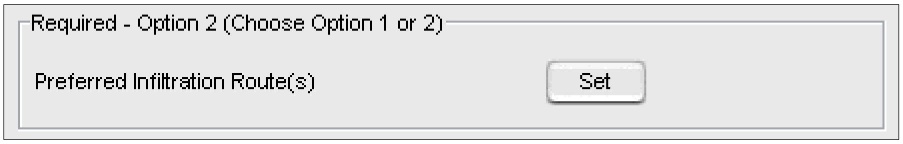
Mean path angular offset – average change of movement direction in degrees.
Variance in path angular offset – +/- change of movement direction in degrees.
Mean segment length – average distance before change of direction.
Variance in segment length - +/- distance before change of direction.



Required - Option 1 (Choose Option 1 or 2)
Mean Path Angular Offset (in degrees): 0.00
Variance in Path Angular Offset (in degrees): 0.00
Mean Segment Length: 0.00
Variance in Segment Length: 0.00

5. Behaviors

Preferred Infiltration route- a pre-drawn route using the create palette.


Required - Option 2 (Choose Option 1 or 2)
Preferred Infiltration Route(s)

Optional Inputs

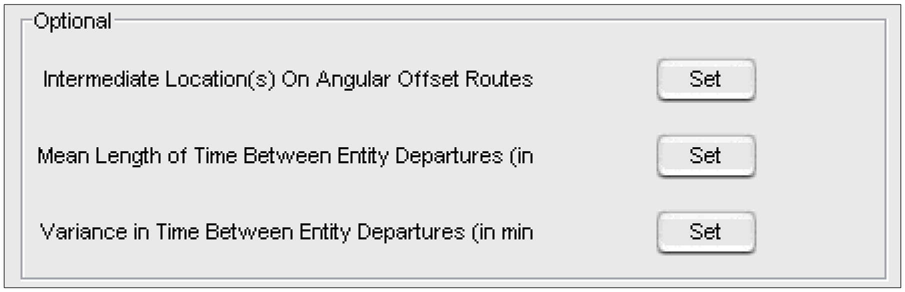
There are three optional inputs for Unconventional Infiltration.

Intermediate locations on angular offset routes – pre-drawn waypoints.

Mean length of time between entity departures (in minutes) – time phased departures if more than one entity is assigned the task.

Variance in time between entity departures (in minutes) – self explanatory.

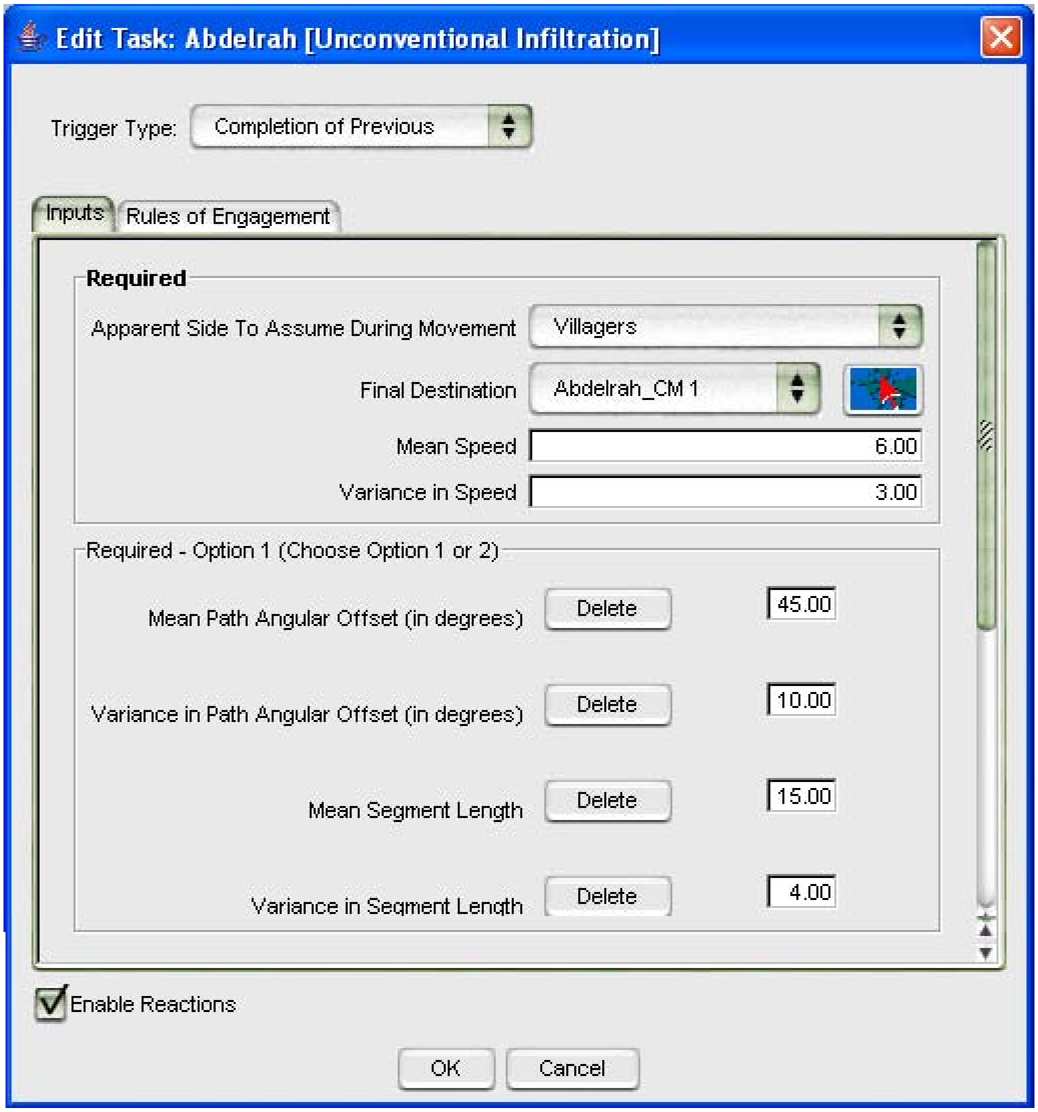
.


Optional
Intermediate Location(s) On Angular Offset Routes
Mean Length of Time Between Entity Departures (in
Variance in Time Between Entity Departures (in min

5. Behaviors

Example

In order to assign Unconventional Infiltration you can either pre-draw an infiltration route, or allow the OneSAF software to determine the route based on the parameters you input.



Edit Task: Abdelrah [Unconventional Infiltration]

Trigger Type: Completion of Previous

Required

Apparent Side To Assume During Movement: Villagers

Final Destination: Abdelrah_CM 1

Mean Speed: 6.00

Variance in Speed: 3.00

Required - Option 1 (Choose Option 1 or 2)

Mean Path Angular Offset (in degrees): 45.00

Variance in Path Angular Offset (in degrees): 10.00

Mean Segment Length: 15.00

Variance in Segment Length: 4.00

☑ Enable Reactions

In this example an insurgent named Abdelrah is being tasked to infiltrate into a part of Shugart-Gordon as a suicide bomber. He assumes the identity of a villager to fool the coalition forces. His final point is in amongst the villagers next to a clinic ran by the Doctors without Borders (this point is designated by the point and click method and named by the system Abdelrah_CM 1). He will meander to that location using speeds that vary from 3 to 9 mph, distance that vary in length from 11 to 19 yards, along legs that will vary in direction of 35 to 55 degrees from the system determined path. He is the only insurgent moving therefore no optional parameters are required.

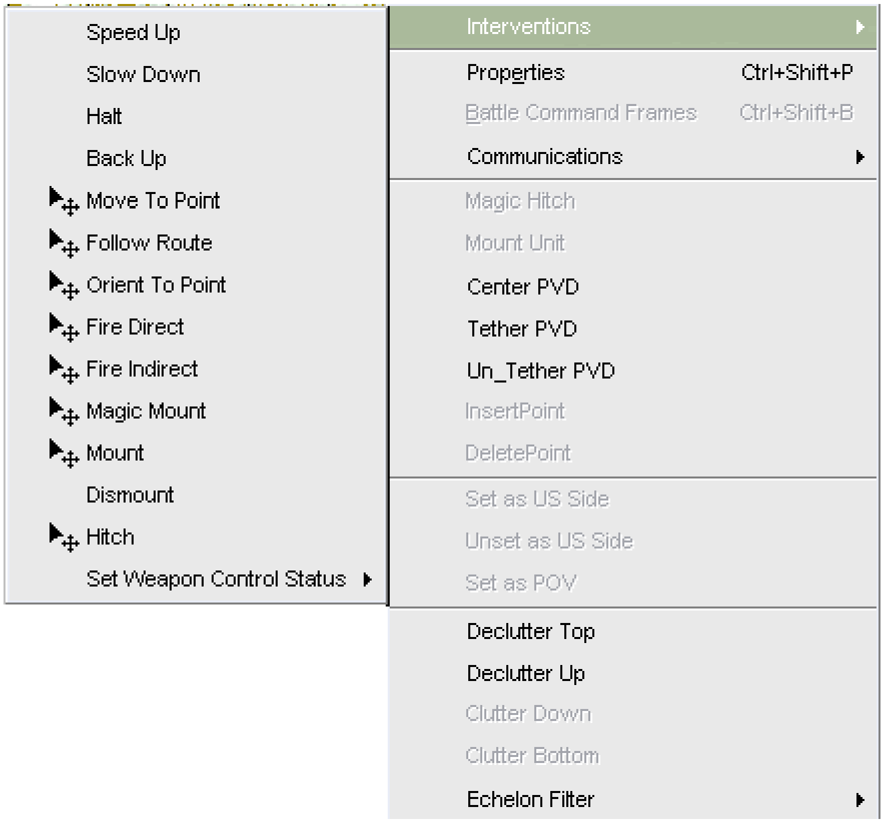
Interventions

There is one more series of commands that you can use to control the actions of entities or units. These commands are used while the scenario is running and allow you to deviate from the proscribed plan or behavior. One word of caution, once you intervene you override the behavior parameters inputted in the Mission Editor and must continue to give separate commands to the entity or unit you intervened on, or end the behavior and begin the next behavior or phase.

To access the interventions for Entities once the scenario has begun:

RC on the Entity on the PVD screen
Mouse over Interventions on the pop-up window
Mouse over the desired intervention and LC

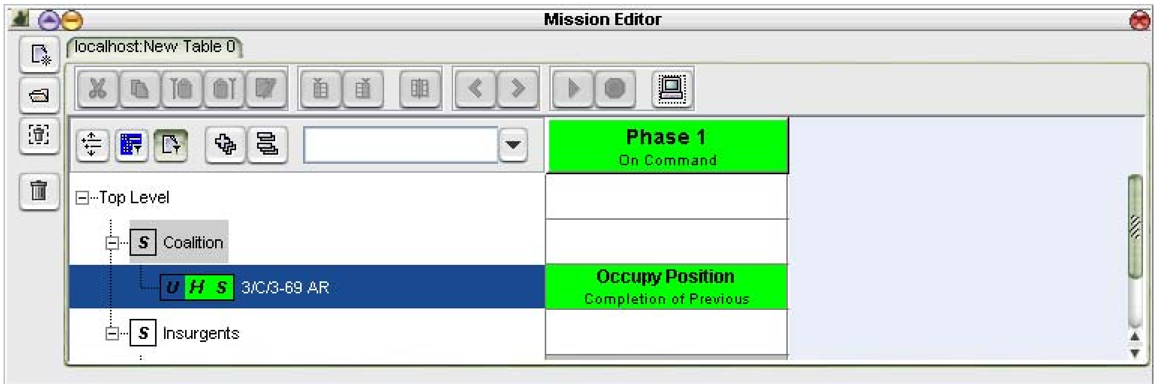
The interventions with the arrow symbol next to them require you to use the point and click method on the PVD screen to activate the intervention and stipulate where you want the Entity to go, shoot, or hitch, etc.


Speed Up
Slow Down
Halt
Back Up
Move To Point
Follow Route
Orient To Point
Fire Direct
Fire Indirect
Magic Mount
Mount
Dismount
Hitch
Set Weapon Control Status
Interventions
Properties Ctrl+Shift+P
Battle Command Frames Ctrl+Shift+B
Communications
Magic Hitch
Mount Unit
Center PVD
Tether PVD
Un_Tether PVD
InsertPoint
DeletePoint
Set as US Side
Unset as US Side
Set as POV
Declutter Top
Declutter Up
Clutter Down
Clutter Bottom
Echelon Filter

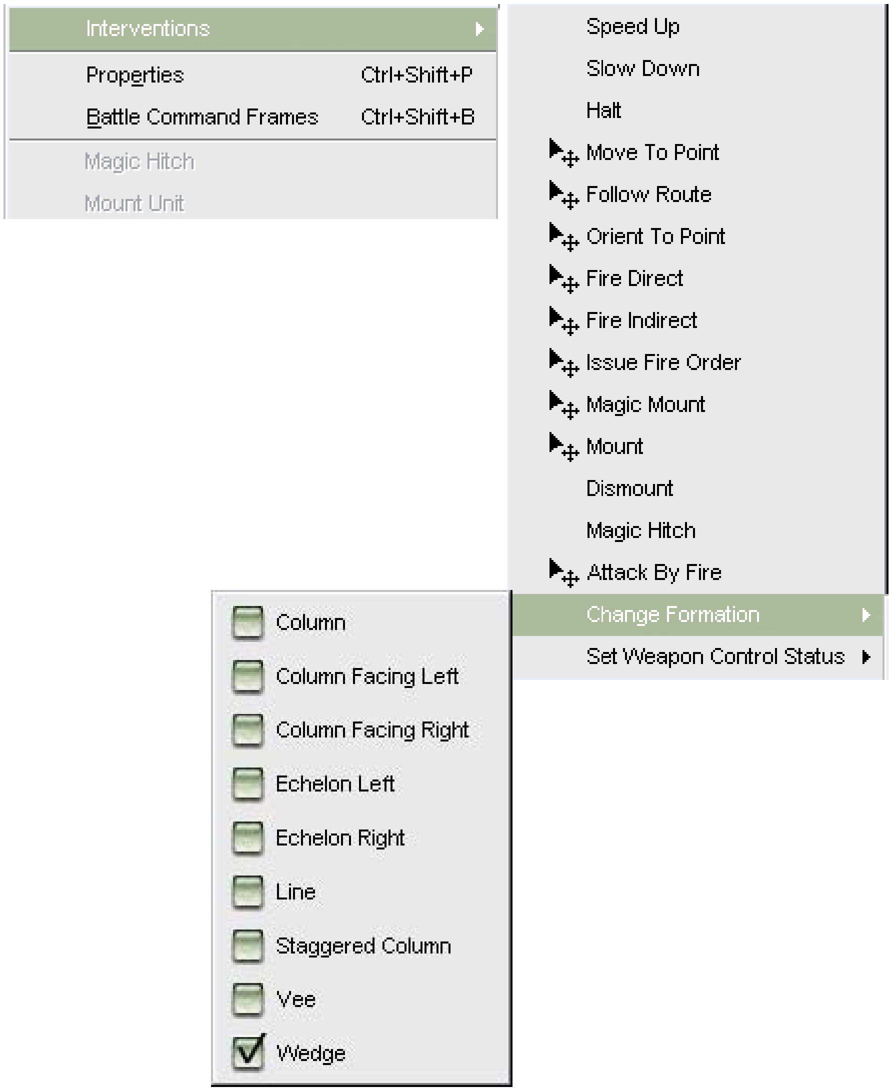
5. Behaviors

To intervene on behalf of an entire unit:

RC on the unit in the Mission Editor


Mission Editor
localhost:New Table 0
Phase 1
On Command
Top Level
S Coalition
U H S 3/C/3-69 AR
Occupy Position
Completion of Previous
S Insurgents

Mouse over Interventions on the pop-up window
Mouse over the desired intervention and LC


Interventions
Properties Ctrl+Shift+P
Battle Command Frames Ctrl+Shift+B
Magic Hitch
Mount Unit
Speed Up
Slow Down
Halt
Move To Point
Follow Route
Orient To Point
Fire Direct
Fire Indirect
Issue Fire Order
Magic Mount
Mount
Dismount
Magic Hitch
Attack By Fire
Change Formation
Set Weapon Control Status
☐ Column
☐ Column Facing Left
☐ Column Facing Right
☐ Echelon Left
☐ Echelon Right
☐ Line
☐ Staggered Column
☐ Vee
☑ Wedge

Example Scenario

The OneSAF simulation software has the capability to replicate simple and complex scenarios. The key factor in both is the operator's knowledge of the system and knowledge of military operations. The basic knowledge of the system, and the steps required to develop a scenario, have been provided in the previous chapters. However, the knowledge of military operations, tactics, techniques and procedures, along with knowledge of the graphical control measures is a function of the user's military experience. This chapter steps through the process for developing a simple scenario based on an exercise at NTC, the user must have an understanding of Maneuver Company operations at the Company level.

The development of a mission at Company level and below involves the use of the 8 steps of the Troop Leading Procedures. OneSAF has the capability to assist in this process especially during the 3rd step "Make a Tentative Plan". Once the Leader has issued the initial warning order he/she begins to develop a plan, steps 2 – 6 of the Military Decision Making Process are combined during this step and usually conducted in an informal manner.

Troop Leading Procedures

- Receive Mission
- Issue Warning Order
- Make tentative Plan →
- Initiate Movement
- Conduct Recon
- Complete Plan
- Issue OPORD
- Supervise and Refine

Plan Development

Mission Analysis

- Analysis of the Mission
    - Purpose
    - Tasks –Specified, Implied, Essential
    - Constraints
    - Write Restated Mission
- Terrain and Weather Analysis
- Enemy Analysis
- Troops available
- Time Available
- Risk Assessment

Course of Action Development

- Analyses relative Combat Power
- Generate Orders
- Array Initial Forces
- Develop Scheme of Maneuver
- Assign Headquarters
- Prepare COA statement and sketch

COA Analysis

- Hasty Wargame

COA Comparison

COA Selection

6. Example Scenario

OneSAF has the capabilities to assist in the development of the plan. The table below lists the steps in the plan development on the left and the OneSAF corresponding capability that can assist on the right.

Plan Development Step	OneSAF Capability
Mission Analysis	
•Analysis of the Mission	
•Purpose	
•Tasks –Specified, Implied, Essential	Assigning Task and Purpose using the Mission Editor
•Constraints	Apply boundary and fire control measures
•Write Restated Mission	
•Terrain and Weather Analysis	LOS, AOS, and Distance Tool
•Enemy Analysis	Develop Enemy task organization and place enemy on PVD screen (map) and determine their most likely and most dangerous COA
•Troops available	Establish the task organization using the Task Organization window: Friendly enemy, etc.
•Time Available	Estimate time to mission completion based on simulation time
•Risk Assessment	Running the scenario
Course of Action Development	
•Analyses relative Combat Power	
•Generate Orders	
•Array Initial Forces	Array forces on the PVD (Map) based on terrain and avenues of approach (friendly, enemy and non-combatant)
•Develop Scheme of Maneuver	Assign behaviors to subordinates
•Assign Headquarters	Identify subordinate elements using the Task Organization window
•Prepare COA statement and sketch	Use print screen capabilities to produce the concept sketch
COA Analysis	
•Hasty Wargame	Run the scenario using increased simulation speed
COA Comparison	Modifying the scenario and re-running
COA Selection	Scenario outcome

The worked example on the following pages integrates the basic functions of OneSAF that are explained and illustrated in this guide.

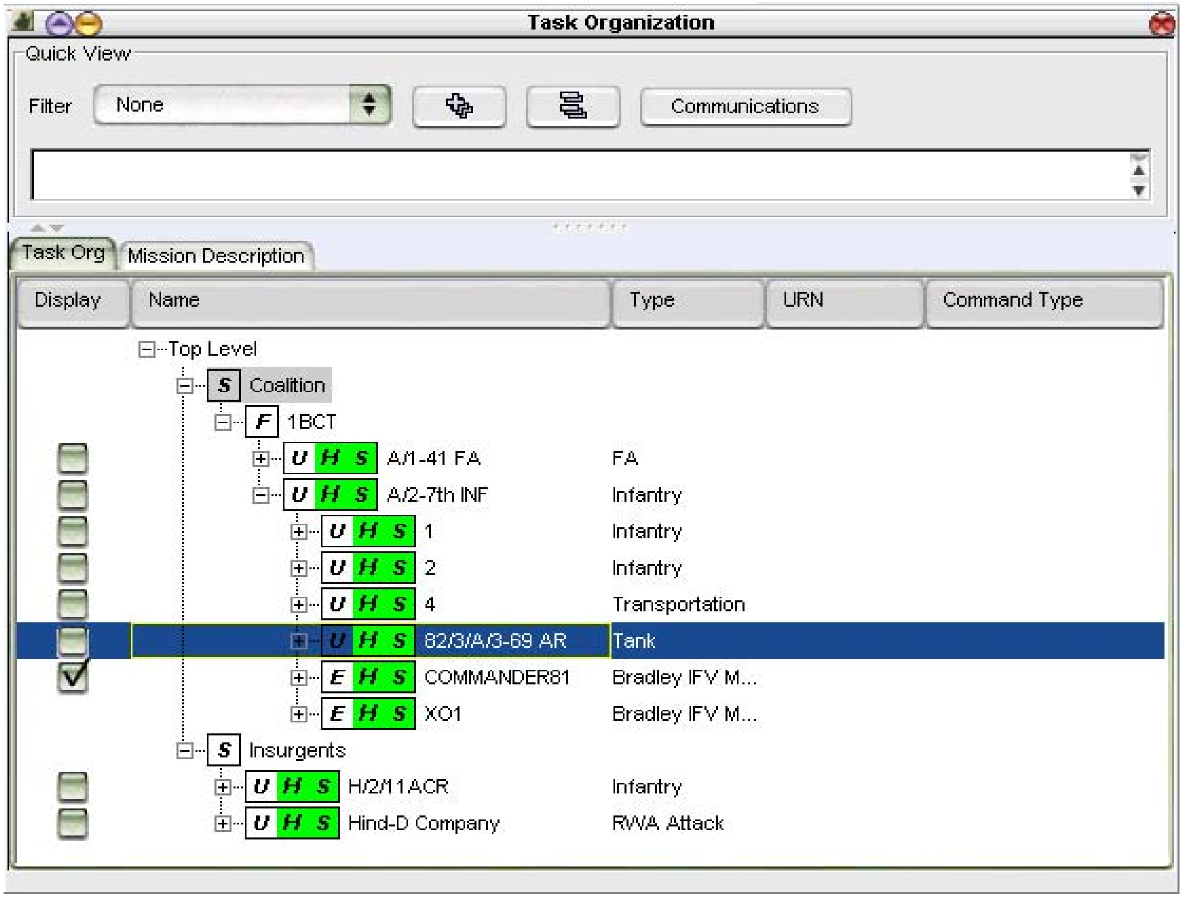
6. Example Scenario

Infantry Company Team Attack

The Infantry Company Team Attack is a basic scenario that incorporates point, linear, and area control measures, as well as using the “On Command”, “Completion of Previous”, and “Phase Line” triggers. The scenario is based on a Company Team attack conducted at the National Training Center in Fort Irwin California. The center mass grid coordinate of the area of operations is 11S NV 42000 11000.

The friendly task organization consists of 2 Infantry (M) Platoons and 1 Armor Platoon with a Field Artillery Company in direct support.

The enemy task organization consists of 1 Infantry (M) platoon of 3 BMPs with 3 Rifle Squads with a company of MI-24D attack helicopters in reserve.



Display	Name	Type	URN	Command Type
	Top Level			
	S Coalition			
	F 1BCT			
☐	U H S A/1-41 FA	FA		
☐	U H S A/2-7th INF	Infantry		
☐	U H S 1	Infantry		
☐	U H S 2	Infantry		
☐	U H S 4	Transportation		
☐	U H S 82/3/A/3-69 AR	Tank		
☑	E H S COMMANDER81	Bradley IFV M...		
	E H S XO1	Bradley IFV M...		
	S Insurgents			
☐	U H S H/2/11ACR	Infantry		
☐	U H S Hind-D Company	RWA Attack		

6. Example Scenario

Control Measures

The point control measures used for this scenario consist of rally points, action points, and target reference points. These points are used to control the final locations of the vehicle sections, orient the rifle squads during the mission, and pinpoint the location for the indirect fires.

The linear control measures used are the phase line/line of departure is line of contact (PL/LDLC), route, and the limit of advance (LOA). The PL/LDLC and route control measure are used to direct and trigger behaviors during the scenario. The LOA graphically control measure is used to depict the Company Teams limit of advance, but it does not control movement.

The area control measures used are the objective, assembly area, and general area. The only control measure used in the behaviors is the objective control measure. The assembly area and general area graphics are used to depict the operational graphics symbols used to control units and operations.

Behaviors

The scenario primarily uses the “Move Tactically” behavior to position and initiate the actions of the friendly forces. “Move tactically” can be used to represent many different tactical missions when you combine its optional parameters with the graphical control measures. Each phase of the scenario requires the platoons to move to pre-designated positions; routes, action, and rally points control their movement.

Scenario

The example developed in OneSAF replicates an Infantry Company Team Attack conducted at the National Training Center and is based on the operations order beginning on the next page.

6. Example Scenario

OPERATIONS ORDER: **09-001(AO IRWIN**)

References: Maps used for Operation: Ft Irwin MIM North and South 1: 50,000

Time Zone Used throughout the Order: Local Standard Time (PST)

Task Organization:
Team Alpha
 HQ/A/2-7 IN (M)
 1/A/2-7 IN (M)
 2/A/2-7 IN (M)
 3/A/3-69 AR
A/1-41 FA

Situation:

a. Weather and Light Data – N/A

b. Enemy Forces. Elements of the 99th MRB are occupying defensive position around the city of Irwintown. 1 Mechanized Rifle Platoon consisting of 3-BMPs and 3-Rifle Squads are located north of Irwintown in the vicinity of Bicycle Lake. They are arrayed in a deliberate defensive posture and are believed to be at 100% strength. They have the capability of reinforcing with air and ground assets within 1 hour.

c. Friendly Forces.

(1). 2-7 IN BN conducts offensive operations in AO Irwintown.

(2). Team Alpha conducts a deliberate attack on Obj Tally Ho to support the liberation of Irwintown.

The Bn Commander's intent is to eliminate the 99th MRBs blockade of the city of Irwintown. We will accomplish this by seizing key terrain along the avenues of approach into Irwintown by destroying the enemy's defensive positions.

(3). Adjacent Units

(a). A/3-69 AR located to the north conducts offensive operations to secure avenues of approach.

(b). C/2-7 IN is the Battalion reserve.

d. Attachments and Detachments: None

Mission – Team Alpha conducts a deliberate attack to seize OBJ Tally Ho NLT 120530AUG2008 in order to support movement of follow-on forces into the city of Irwintown.

Execution

Intent: The Company Commander's intent is to strike with the forces available to destroy this position before they can reinforce. The company will attack with two PLTs and support with one

PLT. The end-state is achieved when the enemy is destroyed and the conditions are set for the follow-on forces to liberate Irwintown.

Concept of the Operation: This will be a 4-phase operation. Phase 1 – Conduct tactical movement of 3 platoons to the SBF and assault positions. Phase 2 – Conduct assault on OBJ Tally Ho. Phase 3 – Consolidate and reorganize. Phase 4 – Conduct a hasty defense and prepare for a counterattack (Each phase is a different phase in OneSAF's mission editor).

(1). Maneuver

(a). Phase 1 - 3/A/3-69 AR crosses the LDLC followed by 1 and 2/A/2-7 IN. Simultaneously, 3/A/3-69 AR follows Route Packers to the north to the SBF position and 1 and 2/A/2-7 IN follow Route Vikings to the south to the assault position.

(b). Phase 2 - 3/A/3-69 AR provides overwatch and support by fire from SBF 1 while 1/A/2-7 IN dismounts its rifle squads with a mission to clear the high ground of enemy forces vicinity Aslt Pos Jessica.

(c). Phase 3 - A/1-41 FA shoots observed fires on TRP 0001 and TRP 0002. Upon completion of indirect fires 1 and 2/A/2-7 IN begin their assault on OBJ Tally Ho. Upon seizing the objective A/2-7 IN consolidates and reorganizes by bounding the 3/A/3-69 AR forward from its SBF to its security positions, and relocating the 2/A/2-7 IN to the east to occupy its security positions.

(d). Phase 4 - A/2-7 IN orients itself to the SE and prepares a Hasty Defensive position in preparation for a counterattack.

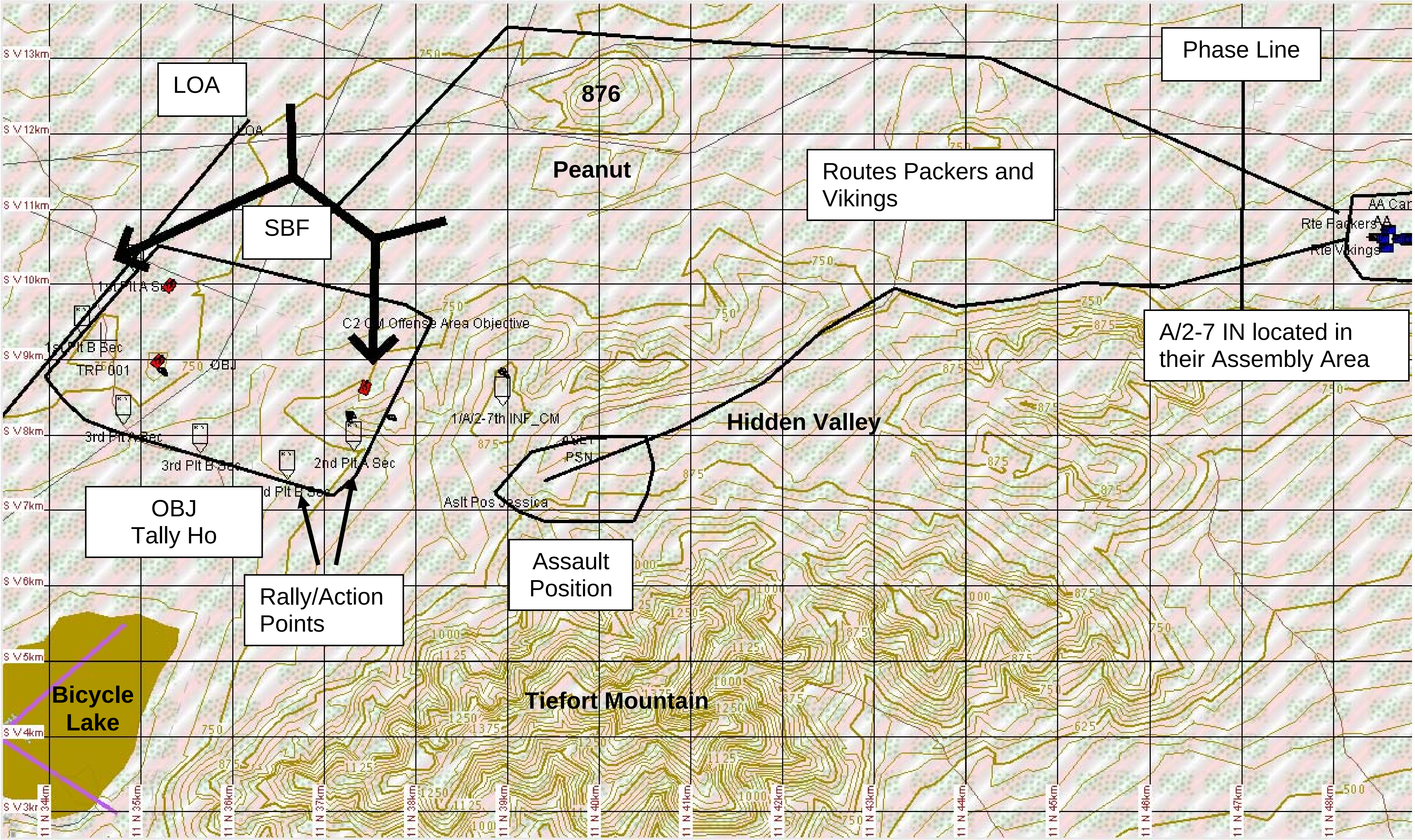
(2) Fires: A/1-41 FA – Priority of fires to 3/A/3-69 AR, 1/A/2-7 IN.

(3).Coordinating Instructions: All Platoons will be prepared to reinforce adjacent platoons if required.

4. SERVICE SUPPORT: Co SOP

5. COMMAND and SIGNAL: Co SOP

6. Example Scenario

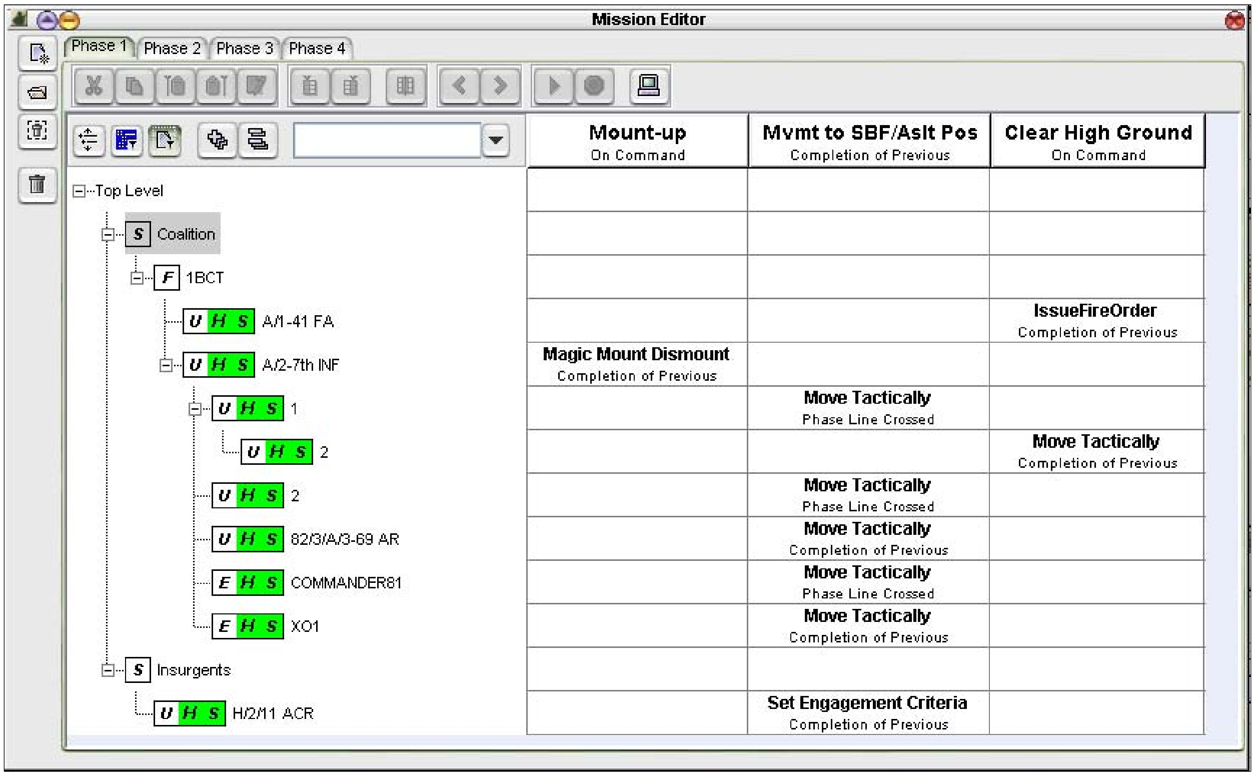

LOA
Phase Line
876
Peanut
Routes Packers and Vikings
SBF
AA Car
Rte Packers
Rte Vikings
1st Plt A Sec
C2 CM Offense Area Objective
1st Plt B Sec
TRP 001
OBJ
A/2-7 IN located in their Assembly Area
1/A/2-7th INF_CM
Hidden Valley
3rd Plt A Sec
3rd Plt B Sec
2nd Plt A Sec
ASLT PSN
Aslt Pos Jessica
OBJ Tally Ho
Assault Position
Rally/Action Points
Bicycle Lake
Tiefort Mountain

This screen shot depicts the final layout of units and control measures. These control measures are drawn using a concept sketch as a foundation. The Field Artillery Battery is located just off the screen east of the assembly area. Known terrain features have been labeled to orient you to the ground.

6. Example Scenario

Screen captures of the Mission Editor during each phase of the operation are provided below. Only the tasked units are visible. The amount of columns within each phase differs based on the amount of detail required to move/action the units.

Phase 1 – Movement (see first tab which is highlighted)



	Mount-up On Command	Mvmt to SBF/Aslt Pos Completion of Previous	Clear High Ground On Command
Top Level			
S Coalition			
F 1BCT			
U H S A/1-41 FA			IssueFireOrder Completion of Previous
U H S A/2-7th INF	Magic Mount Dismount Completion of Previous		
U H S 1		Move Tactically Phase Line Crossed	
U H S 2			Move Tactically Completion of Previous
U H S 2		Move Tactically Phase Line Crossed	
U H S 82/3/A/3-69 AR		Move Tactically Completion of Previous	
E H S COMMANDER81		Move Tactically Phase Line Crossed	
E H S XO1		Move Tactically Completion of Previous	
S Insurgents			
U H S H/2/11 ACR		Set Engagement Criteria Completion of Previous	

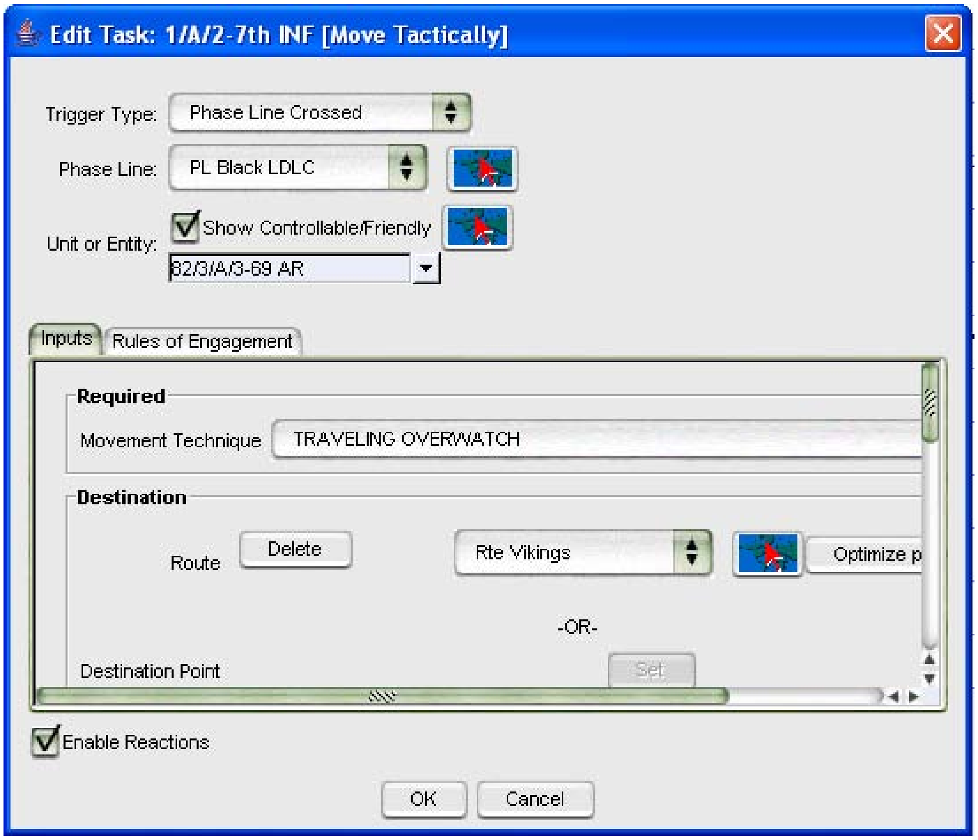
Phase 1 of the scenario focuses on moving the platoons from their assembly area to their assault and support by fire positions using the designated routes, followed by the rifle squads dismounting from their vehicles and moving to the high ground. Prior to moving the platoons a “Magic Mount/Dismount” behavior is inserted to insure that all of the individual combatants are inside the vehicles (PLT LDR and RTO specifically).

The “Mvmt to SBF/Aslt Pos” column contains all of the movement commands for the friendly forces and the engagement criteria commands for the enemy forces.

6. Example Scenario

As previously explained in the concept of the operation the tank platoon (3/A/3-69 AR) moves from the assembly area first. To sequence the movement of the infantry platoons the “Phase Line Crossed” trigger was used in conjunction with the graphic control measure “PL Black/LDLC”. The screen capture below depicts the use of the “Phase Line Crossed” trigger to move the next platoon.

This behavior has been assigned to 1/A/2-7 IN as the unit we want to leave the assembly area after the tank platoon. The first step is to select the phase line from a list of pre-drawn control measures; next you must select which unit will cross the phase line and trigger the movement of 1/A/2-7 IN. In this case we selected the tank platoon 3/A/3-69 AR.



Edit Task: 1/A/2-7th INF [Move Tactically]

Trigger Type: Phase Line Crossed

Phase Line: PL Black LDLC

☑ Show Controllable/Friendly

Unit or Entity: 82/3/A/3-69 AR

Movement Technique: TRAVELING OVERWATCH

Route: Rte Vikings

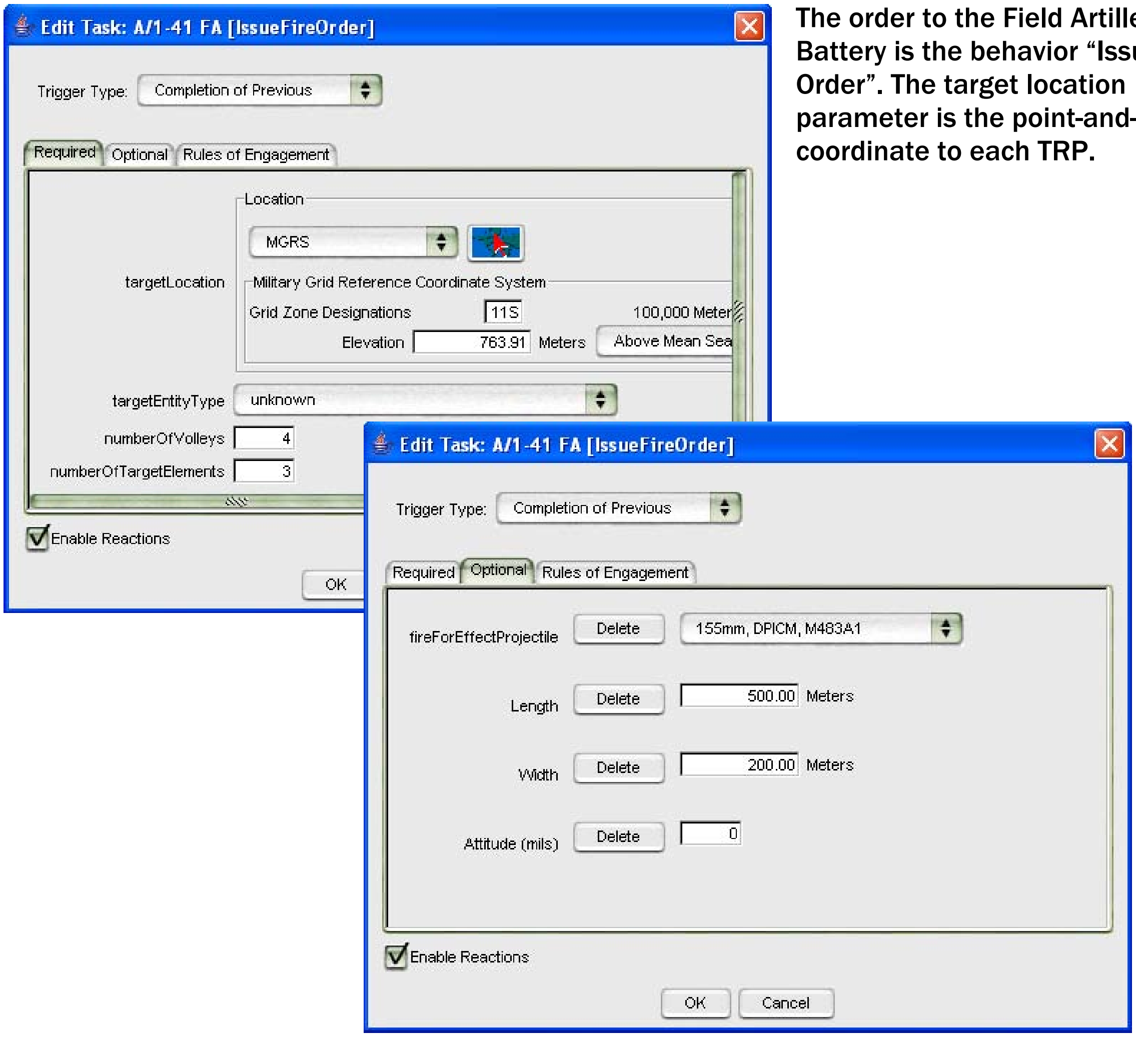
☑ Enable Reactions

The last platoon to move was 2/A/2-7 IN; to trigger its movement assign this behavior to it, but select 1/A/2-7 IN as the unit to cross the phase line.

The Commander and XO move with the main effort and supporting effort respectively. You can copy the move tactically behaviors from those platoons (1/A/2-7 IN and 3/A/3-69 AR) and paste them into the cell opposite the two entities.

6. Example Scenario

The “Clear High Ground” column includes the behaviors for the FA Platoon to shot at TRP 001 and TRP 002, and the behavior for the 1st Platoon rifle squads to move to an action point located in the hills above the vehicles and to begin clearing the high ground of all enemy forces.



Edit Task: A/1-41 FA [IssueFireOrder]

Trigger Type: Completion of Previous

targetLocation: Location MGRS

Military Grid Reference Coordinate System

Grid Zone Designations 11S 100,000 Meter

Elevation 763.91 Meters Above Mean Sea

targetEntityType: unknown

numberOfVolleys: 4

numberOfTargetElements: 3

☑ Enable Reactions

Edit Task: A/1-41 FA [IssueFireOrder]

Trigger Type: Completion of Previous

fireForEffectProjectile: 155mm, DPICM, M483A1

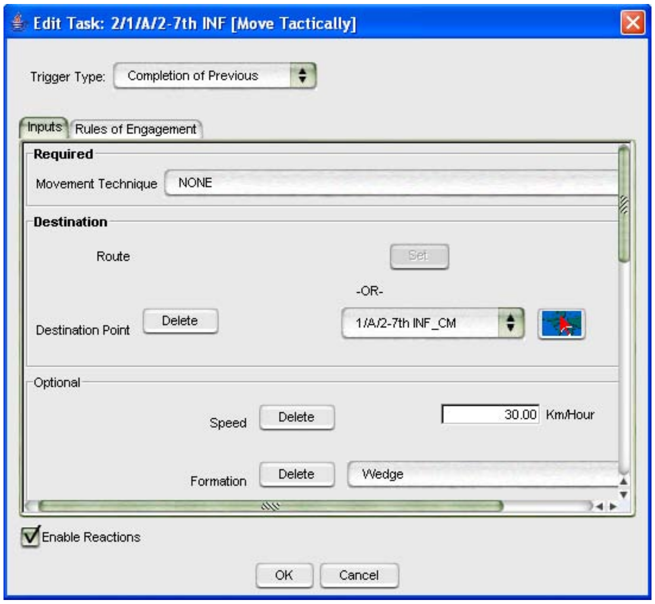
Length: 500.00 Meters

Width: 200.00 Meters

Attitude (mils): 0

☑ Enable Reactions

The order to the Field Artillery Battery is the behavior “Issue Fire Order”. The target location parameter is the point-and-click grid coordinate to each TRP.



Edit Task: 2/1/A/2-7th INF [Move Tactically]

Trigger Type: Completion of Previous

Required

Movement Technique: NONE

Destination

Route

-OR-

Destination Point: 1/A/2-7th INF_CM

Optional

Speed: 30.00 Km/Hour

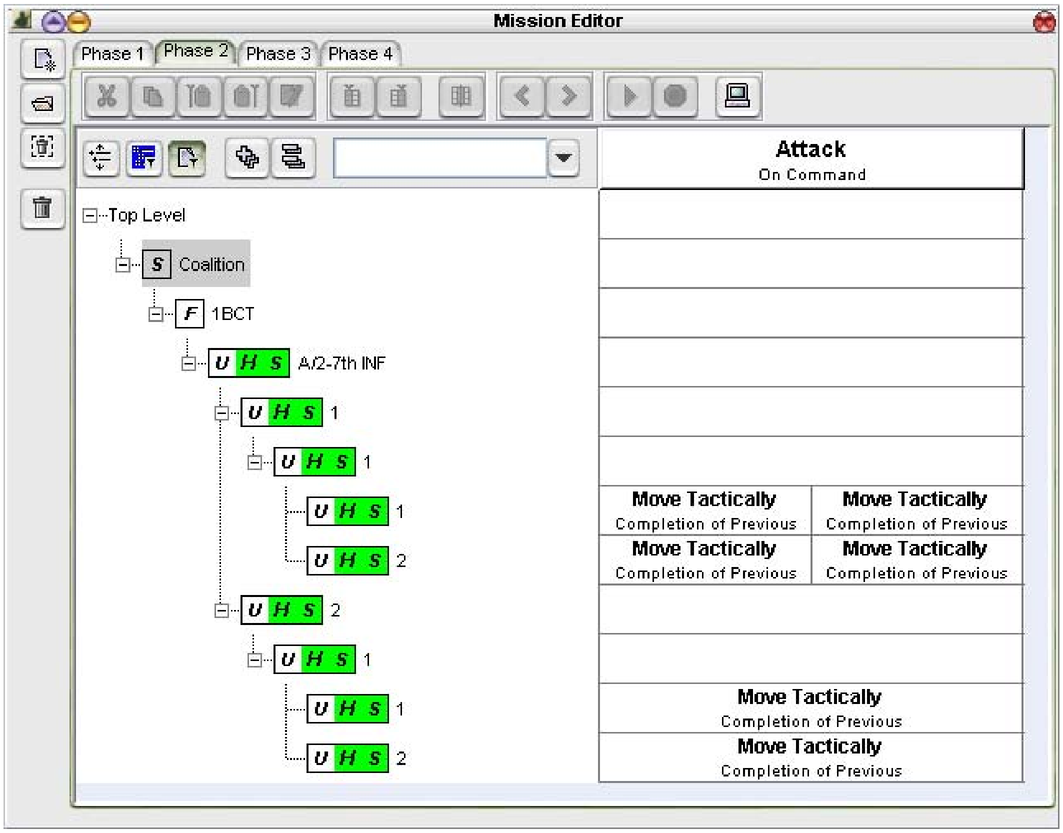
Formation: Wedge

☑ Enable Reactions

The order to 1st Squad 1st Platoon to clear the high ground comes in the form of a move tactically behavior to a point-and-click action point. The tactical actions of the Squad are determined by the enable reactions and weapons status parameters.

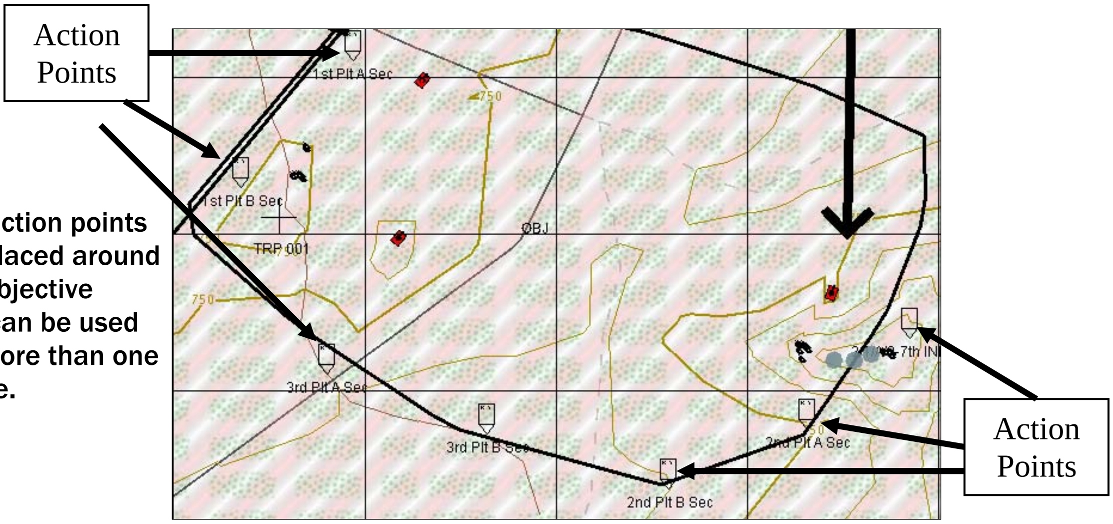
6. Example Scenario

Phase 2 - Attack


Mission Editor
Phase 1
Phase 2
Phase 3
Phase 4

	Attack On Command	
Top Level		
S Coalition		
F 1BCT		
U H S A/2-7th INF		
U H S 1		
U H S 1		
U H S 1	Move Tactically Completion of Previous	Move Tactically Completion of Previous
U H S 2	Move Tactically Completion of Previous	Move Tactically Completion of Previous
U H S 2		
U H S 1		
U H S 1	Move Tactically Completion of Previous	
U H S 2	Move Tactically Completion of Previous	

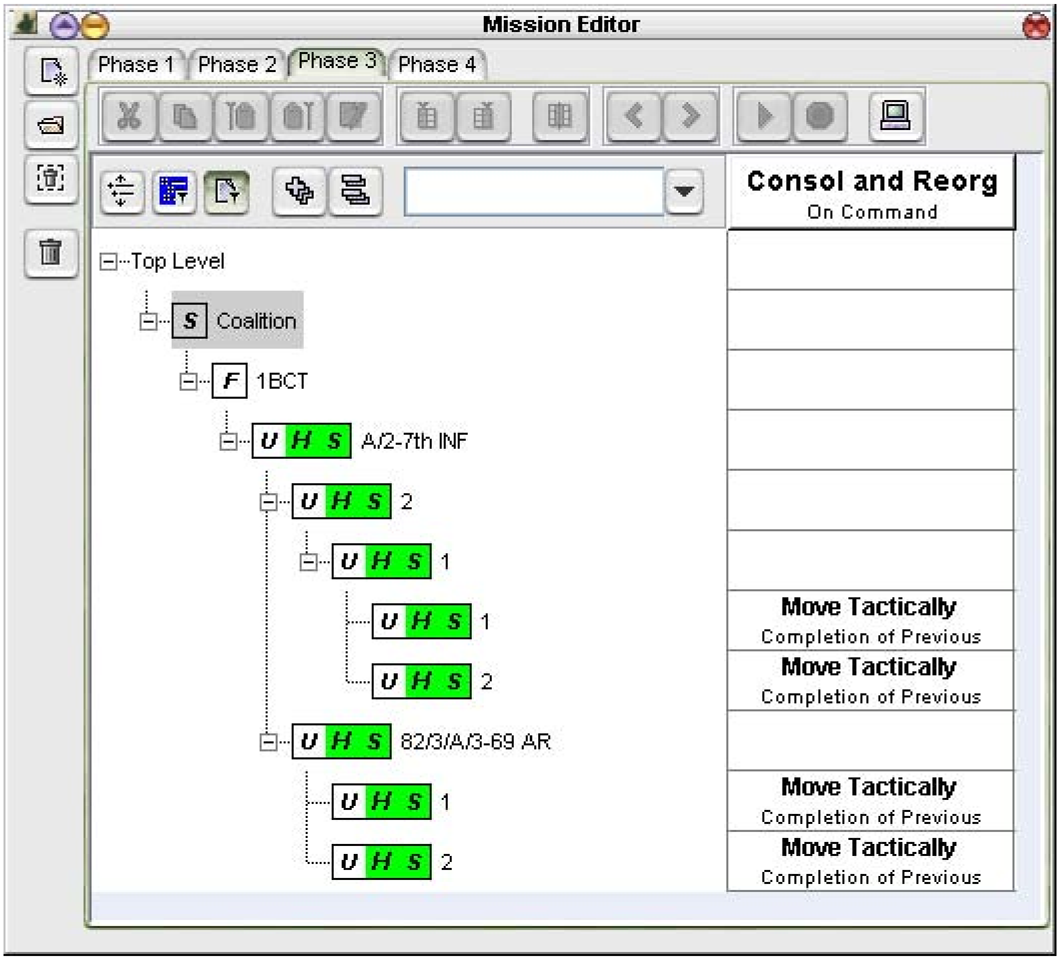
Phase 2 of the scenario focuses on moving the 2 Infantry platoons across OBJ Tally Ho. Currently, the OneSAF software does not incorporate an "Assault Objective" behavior; therefore, using the "Move Tactically" behavior with well placed action points will facilitate the movement of the forces from one side of the objective to the other.


Action Points
1st Plt A Sec
750
1st Plt B Sec
TRP 001
OBJ
750
3rd Plt A Sec
3rd Plt B Sec
2nd Plt B Sec
2nd Plt A Sec
A/2-7th INF
Action Points

The action points are placed around the objective and can be used for more than one phase.

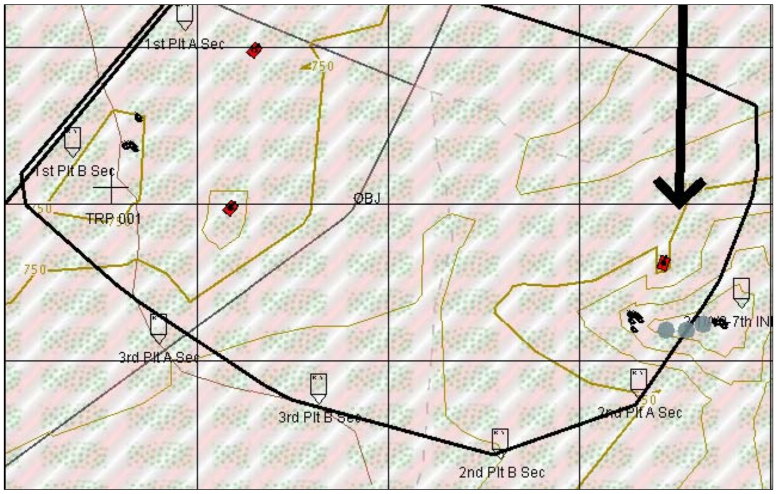
6. Example Scenario

Phase 3 – Consolidate and Reorganize


Mission Editor
Phase 1
Phase 2
Phase 3
Phase 4
Consol and Reorg
On Command
Top Level
S Coalition
F 1BCT
U H S A/2-7th INF
U H S 2
U H S 1
U H S 1
U H S 2
U H S 82/3/A/3-69 AR
U H S 1
U H S 2
Move Tactically
Completion of Previous
Move Tactically
Completion of Previous
Move Tactically
Completion of Previous
Move Tactically
Completion of Previous

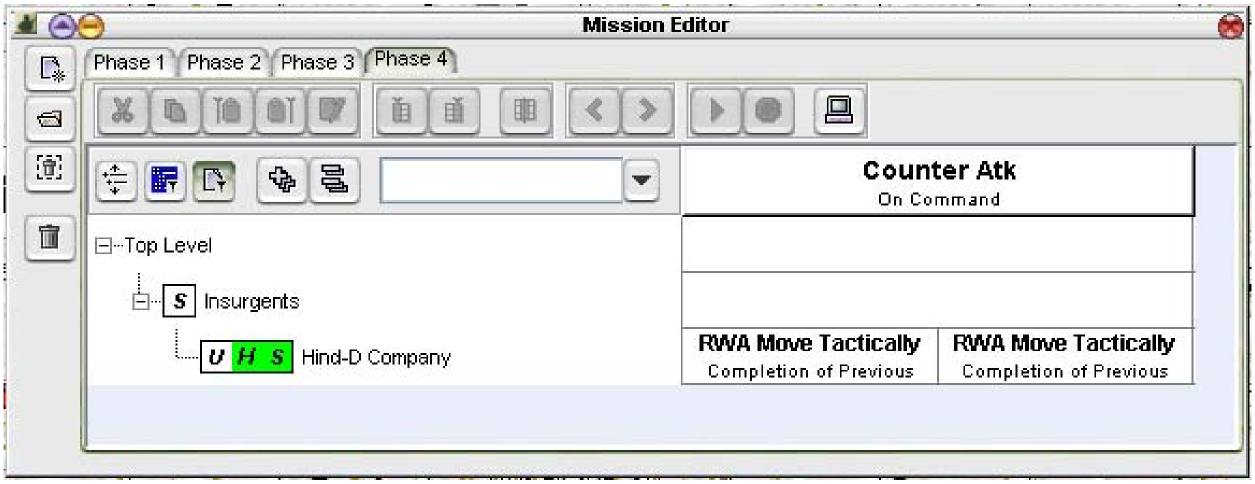
Phase 3 of the scenario moves the units to their positions in order to consolidate and reorganize, and prepare for a counterattack; this involves the use of the "Move Tactically" behavior with the pre-drawn rally points to re-position the platoons based on a hasty defensive plan. Currently, OneSAF does not have a "Consolidate and Reorganize" behavior that requires the user to plan the specified and implied task associated with this behavior.

The action points are arranged in a semi-circle which corresponds to how a unit will secure the objective and prepare for a counterattack. The platoons are ordered to move to their respective action points by using the "Move Tactically" behavior. (Disregard the little grey circles they are 155mm artillery rounds impacting. This screen capture was taken as the scenario was running).


1st Plt A Sec
750
1st Plt B Sec
TRP 001
750
750
OBJ
3rd Plt A Sec
3rd Plt B Sec
2nd Plt B Sec
2nd Plt A Sec
7th INI

6. Example Scenario

Phase 4 – Counterattack


Mission Editor
Phase 1
Phase 2
Phase 3
Phase 4
Top Level
S Insurgents
U H S Hind-D Company
Counter Atk
On Command
RWA Move Tactically
Completion of Previous
RWA Move Tactically
Completion of Previous

Phase 4 is a 2-leg rotary wing move tactically phase that sends the reinforcing aviation company towards the objective as a counterattacking force.

Appendix A

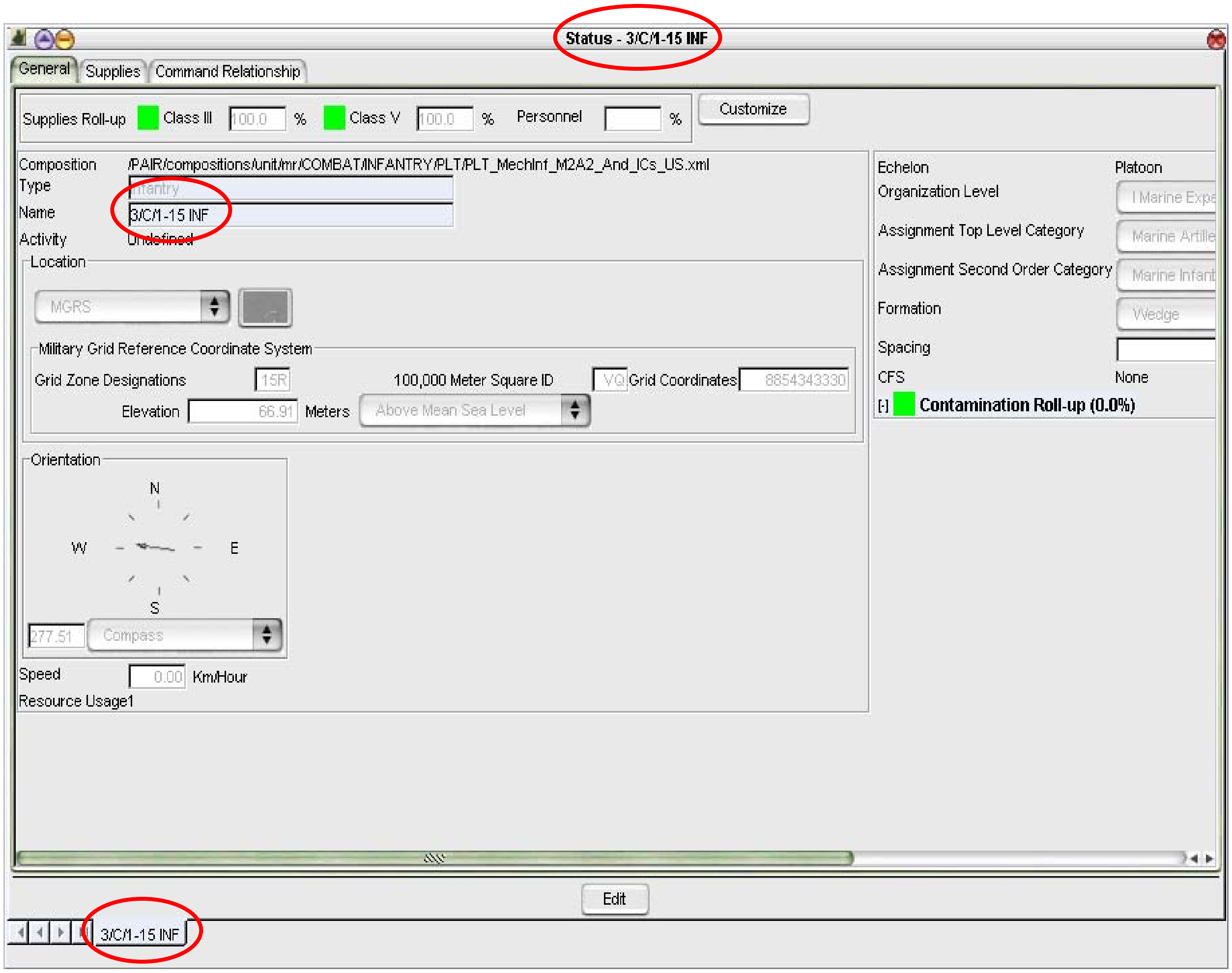
Status Window

The Status window has multiple purposes. It is used to display a snapshot of the entities or units status, edit the basic load or cargo (Entity only), set supply status and threshold percentage, change location and heading on the PVD, redefine the name and command relationship of units or in the case of a vehicle entity, determines the passengers of the vehicle.

As previously stated in Chapter 4, there are 2 ways to populate the Status window:

1. Double LC on the entity on the PVD screen, or
2. In either the ME or TO LC the entity/unit to highlight, RC and mouse over properties and LC.

The status window shown below is for 3rd Platoon, Charlie Company, First of the Fifteenth Infantry (3/C/1-15 INF). The name of the entity/unit is located in three different locations on the Status window.



Supplies Roll-up 🟩 Class III 100.0 % 🟩 Class V 100.0 % Personnel %

Composition /PAIR/compositions/unit/mr/COMBAT/INFANTRY/PLT/PLT_MechInf_M2A2_And_ICs_US.xml
Type nfantry
Name 3/C/1-15 INF
Activity Undefined

MGRS

Military Grid Reference Coordinate System
Grid Zone Designations 15R
100,000 Meter Square ID VQ
Grid Coordinates 8854343330
Elevation 66.91 Meters
Above Mean Sea Level

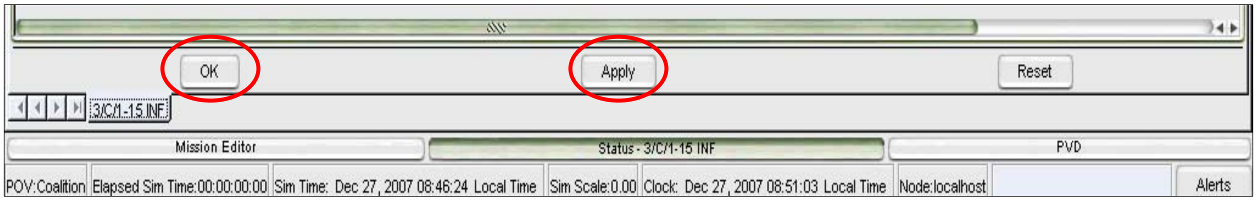
277.51 Compass

Speed 0.00 Km/Hour
Resource Usage1

Echelon Platoon
Organization Level I Marine Expe
Assignment Top Level Category Marine Artille
Assignment Second Order Category Marine Infant
Formation Wedge
Spacing
CFS None
[-] 🟩 **Contamination Roll-up (0.0%)**

App A. Status Window

In order to edit any information contained in the window you must first select the “Edit” button at the bottom of the Status screen. Once selected, the drop down menus that can be edited will change from grey to black and the “Ok”, “Apply”, and “Reset” buttons will replace the “Edit” button at the bottom of the screen. For example, if you wanted to change the location of the unit you would select “edit” and then the MGRS menu. Or if you wanted to change the orientation you would select “edit” and then change the unit’s heading by either dragging the compass arrow around to the new heading, or change the degree number by typing in the new heading. After you have made the desired changes you then LC “Apply” then “OK”, if you LC “Reset” you will lose all changes made and the status will refer back to the default values.



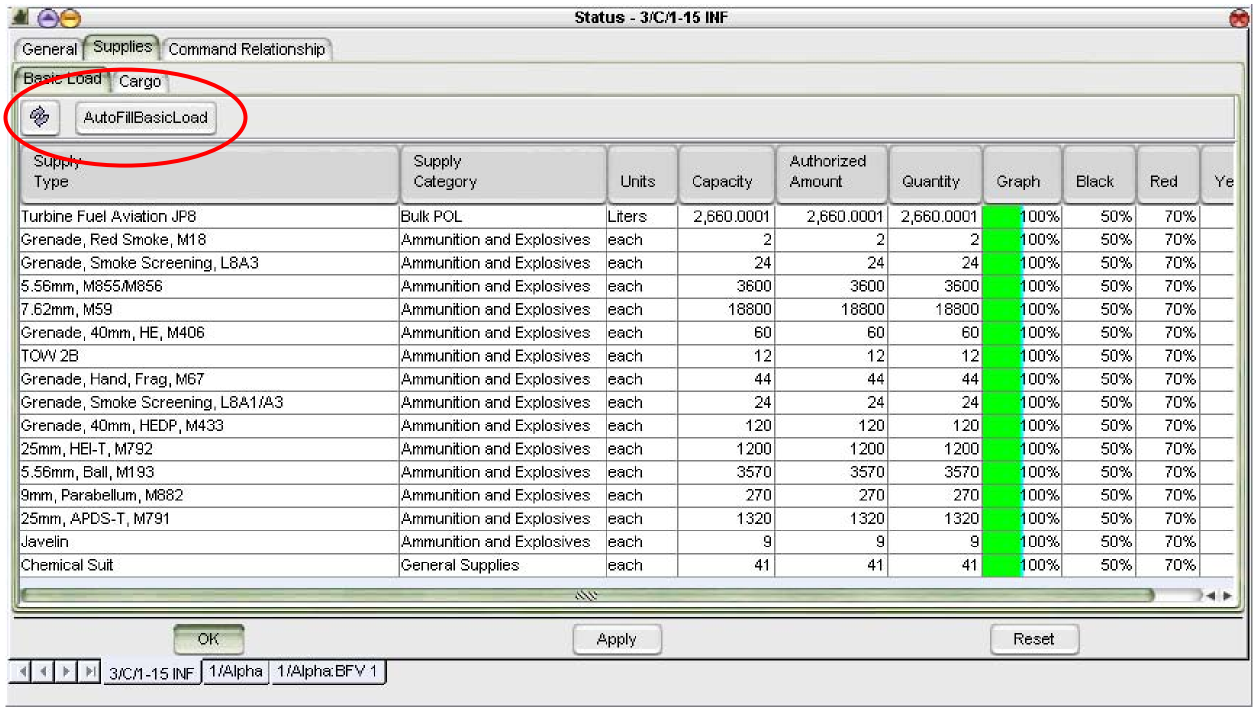
POV:Coalition | Elapsed Sim Time:00:00:00:00 | Sim Time: Dec 27, 2007 08:46:24 Local Time | Sim Scale:0.00 | Clock: Dec 27, 2007 08:51:03 Local Time | Node:localhost

Modifying the Basic Load

The Entity/Unit information is contained on tabs located at the top of the Status window. The number of tabs differs in conjunction with the size of the Entity/Unit selected. They can range from 3 tabs, “General”, “Supplies”, and “Command Relationship”, to 3 additional tabs “Personnel”, “External Components” and “Components”. The “Supplies” and “Personnel” tabs have 2 additional sub-tabs labeled “Basic Load” and “Cargo”, and “Crew” and “Passengers”. It is within these tabs that you can modify the equipment or ammunition that an entity carries, or move personnel around within the vehicles.

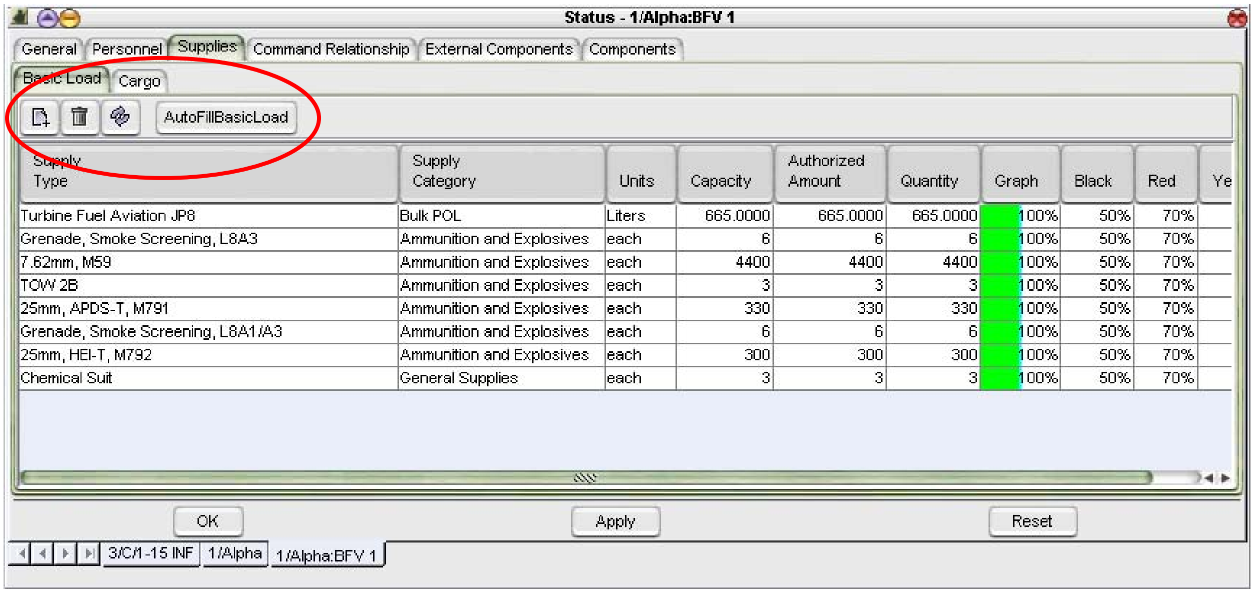
You can only modify the basic load of an entity. You can autofill and refresh the pre-determined basic load of a unit.

The screen shot below depicts the platoon’s basic load of ammunition, fuel, and general supplies. You cannot modify the basic load; you can only refresh or autofill. You can see the difference between a unit’s supply tab and an entity’s supply tab (next page). Under the Basic Load tab on the screen shot below there are only 2 options, the refresh button and the autofill button.



Supply Type	Supply Category	Units	Capacity	Authorized Amount	Quantity	Graph	Black	Red	Ye
Turbine Fuel Aviation JP8	Bulk POL	Liters	2,660.0001	2,660.0001	2,660.0001	100%	50%	70%	
Grenade, Red Smoke, M18	Ammunition and Explosives	each	2	2	2	100%	50%	70%	
Grenade, Smoke Screening, L8A3	Ammunition and Explosives	each	24	24	24	100%	50%	70%	
5.56mm, M855/M856	Ammunition and Explosives	each	3600	3600	3600	100%	50%	70%	
7.62mm, M59	Ammunition and Explosives	each	18800	18800	18800	100%	50%	70%	
Grenade, 40mm, HE, M406	Ammunition and Explosives	each	60	60	60	100%	50%	70%	
TOW 2B	Ammunition and Explosives	each	12	12	12	100%	50%	70%	
Grenade, Hand, Frag, M67	Ammunition and Explosives	each	44	44	44	100%	50%	70%	
Grenade, Smoke Screening, L8A1/A3	Ammunition and Explosives	each	24	24	24	100%	50%	70%	
Grenade, 40mm, HEDP, M433	Ammunition and Explosives	each	120	120	120	100%	50%	70%	
25mm, HEI-T, M792	Ammunition and Explosives	each	1200	1200	1200	100%	50%	70%	
5.56mm, Ball, M193	Ammunition and Explosives	each	3570	3570	3570	100%	50%	70%	
9mm, Parabellum, M882	Ammunition and Explosives	each	270	270	270	100%	50%	70%	
25mm, APDS-T, M791	Ammunition and Explosives	each	1320	1320	1320	100%	50%	70%	
Javelin	Ammunition and Explosives	each	9	9	9	100%	50%	70%	
Chemical Suit	General Supplies	each	41	41	41	100%	50%	70%	

This screen shot is of a single Bradley Fighting Vehicle (an entity) from the platoon depicted in the screen shot above. The difference on the supply tab is the insertion of the “Add a Supply” and the “Remove selected supplies” buttons before the “Refresh” and “AutoFill” buttons. These buttons allow you to modify the entity’s basic load.


Status - 1/Alpha:BFV 1
General
Personnel
Supplies
Command Relationship
External Components
Components
Basic Load
Cargo
AutoFillBasicLoad
OK
Apply
Reset
3/C/1-15 INF
1/Alpha
1/Alpha:BFV 1

Supply Type	Supply Category	Units	Capacity	Authorized Amount	Quantity	Graph	Black	Red	Ye
Turbine Fuel Aviation JP8	Bulk POL	Liters	665.0000	665.0000	665.0000	🟩 100%	50%	70%	
Grenade, Smoke Screening, L8A3	Ammunition and Explosives	each	6	6	6	🟩 100%	50%	70%	
7.62mm, M59	Ammunition and Explosives	each	4400	4400	4400	🟩 100%	50%	70%	
TOW 2B	Ammunition and Explosives	each	3	3	3	🟩 100%	50%	70%	
25mm, APDS-T, M791	Ammunition and Explosives	each	330	330	330	🟩 100%	50%	70%	
Grenade, Smoke Screening, L8A1/A3	Ammunition and Explosives	each	6	6	6	🟩 100%	50%	70%	
25mm, HEI-T, M792	Ammunition and Explosives	each	300	300	300	🟩 100%	50%	70%	
Chemical Suit	General Supplies	each	3	3	3	🟩 100%	50%	70%	

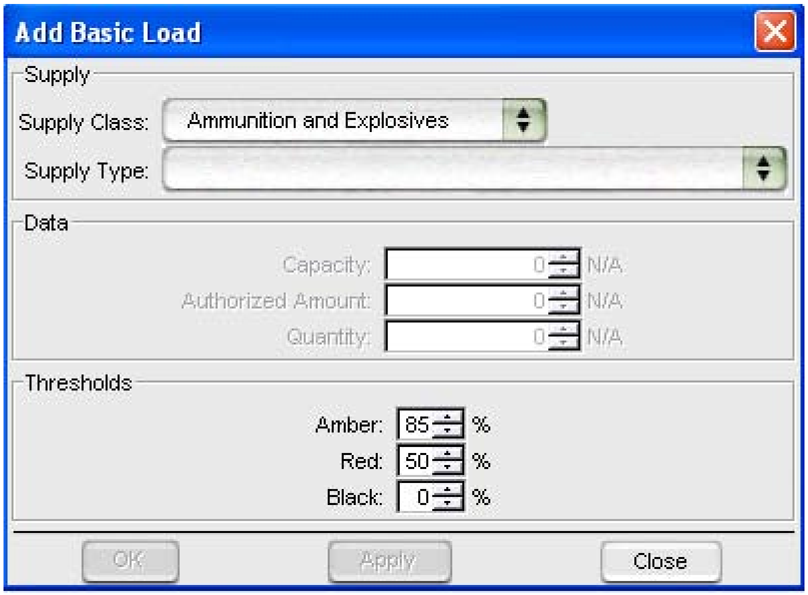
To modify the entity’s basic load by adding supplies

- LC the Edit button
- LC the Add a supply button

The Add Basic Load window will appear. Use the drop down arrows next to the Supply Class and Type to reveal the list of available items.

- LC the desired class and type of supply

The class and type of supplies are from one consolidated list that are available to all entities and units.


Add Basic Load
Supply
Data
Thresholds
OK
Apply
Close

Supply Class: Ammunition and Explosives

Supply Type:

Capacity: 0 N/A

Authorized Amount: 0 N/A

Quantity: 0 N/A

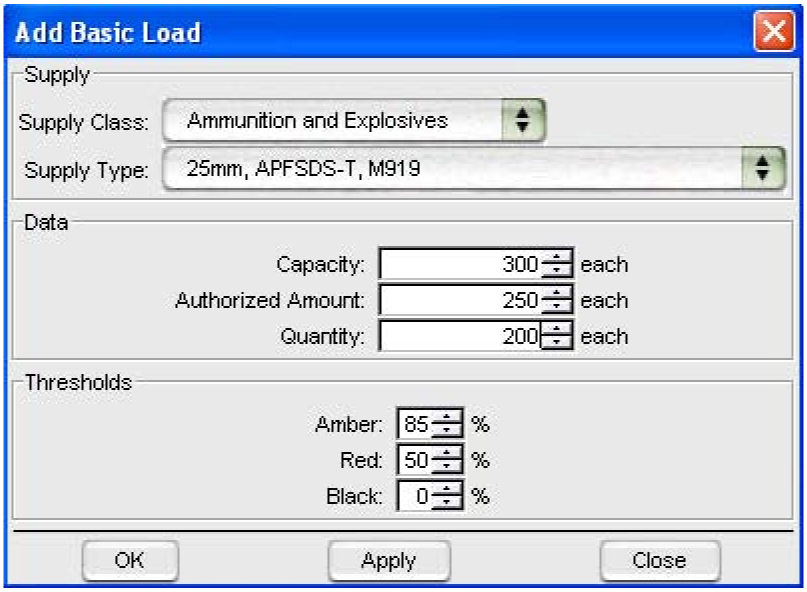
Amber: 85 %

Red: 50 %

Black: 0 %

Adjust the amount of the supply in the Data portion of the Add Basic Load window. The 3 inputs are Capacity, Authorized Amount, and Quantity. In this example each number is different from the other. The difference between the Capacity and the Quantity will determine the percentage of supplies with which the entity starts the phase.

These numbers in conjunction with the Threshold percentages (user determined) alert the user, through the use of the colors Green, Amber, Red, and Black, to the supply status of the entity during combat operations.


Add Basic Load

Supply

Supply Class: Ammunition and Explosives

Supply Type: 25mm, APFSDS-T, M919

Data

Capacity: 300 each

Authorized Amount: 250 each

Quantity: 200 each

Thresholds

Amber: 85 %

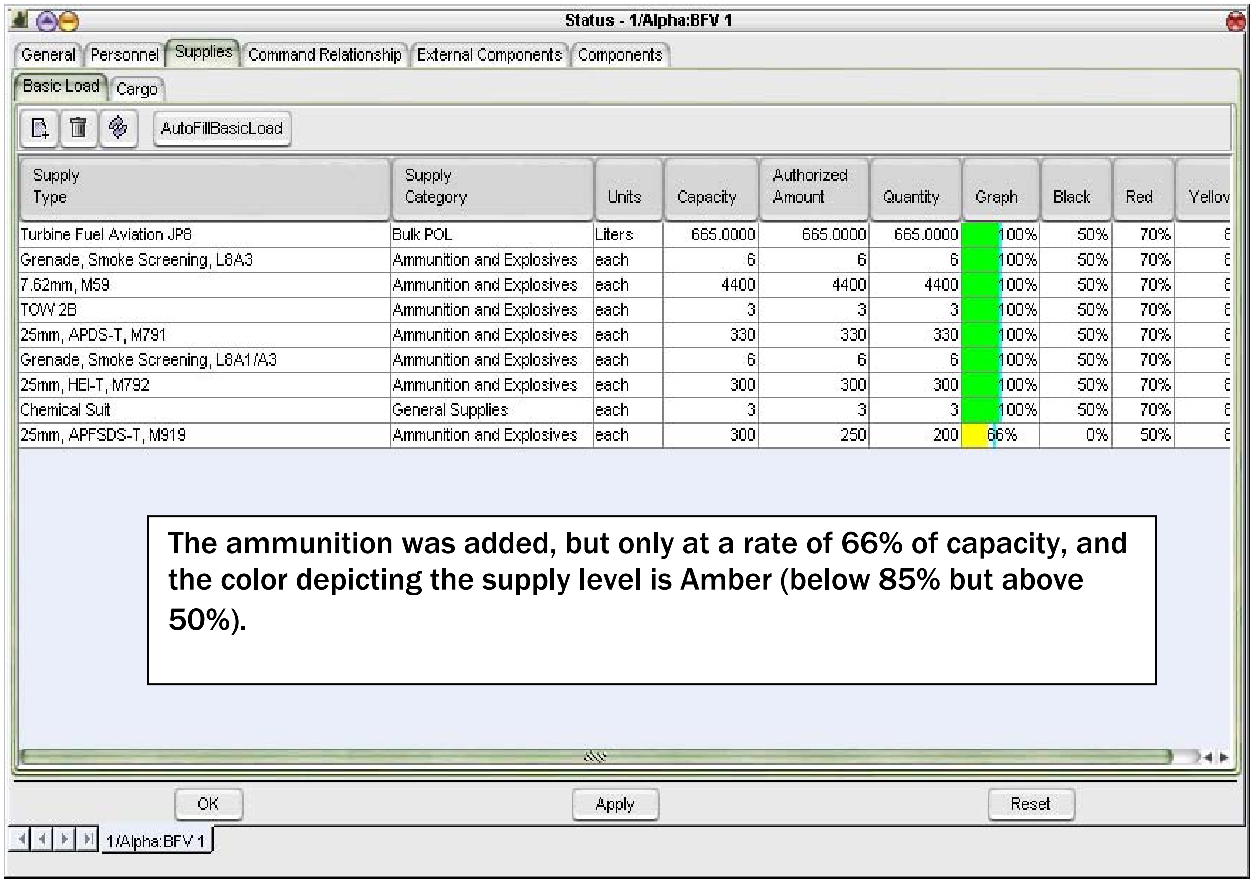
Red: 50 %

Black: 0 %

OK
Apply
Close

- LC Apply
- LC OK

The Status window for the entity will update with the added supplies and display the starting amount and appropriate threshold color.


Status - 1/Alpha:BFV 1
General
Personnel
Supplies
Command Relationship
External Components
Components
Basic Load
Cargo
AutoFillBasicLoad

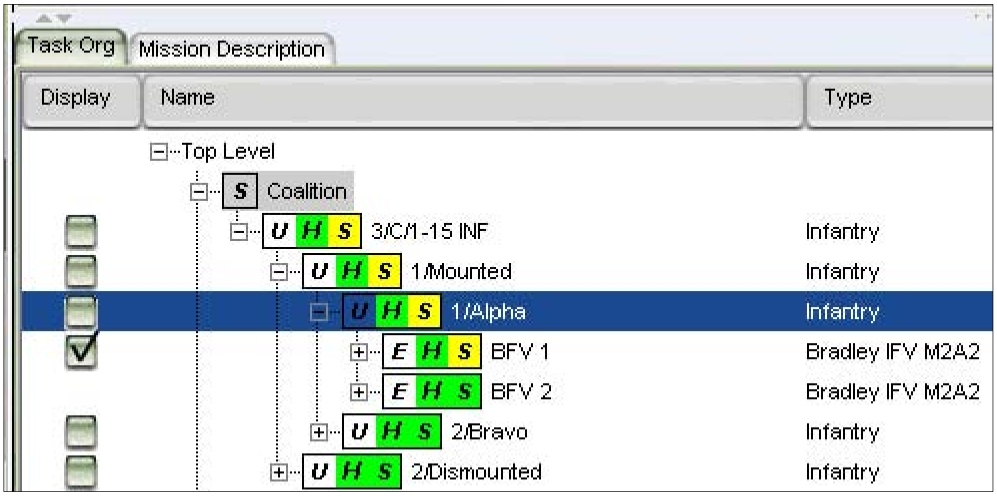
Supply Type	Supply Category	Units	Capacity	Authorized Amount	Quantity	Graph	Black	Red	Yellov
Turbine Fuel Aviation JP8	Bulk POL	Liters	665.0000	665.0000	665.0000	🟩 100%	50%	70%	8
Grenade, Smoke Screening, L8A3	Ammunition and Explosives	each	6	6	6	🟩 100%	50%	70%	8
7.62mm, M59	Ammunition and Explosives	each	4400	4400	4400	🟩 100%	50%	70%	8
TOW 2B	Ammunition and Explosives	each	3	3	3	🟩 100%	50%	70%	8
25mm, APDS-T, M791	Ammunition and Explosives	each	330	330	330	🟩 100%	50%	70%	8
Grenade, Smoke Screening, L8A1/A3	Ammunition and Explosives	each	6	6	6	🟩 100%	50%	70%	8
25mm, HEI-T, M792	Ammunition and Explosives	each	300	300	300	🟩 100%	50%	70%	8
Chemical Suit	General Supplies	each	3	3	3	🟩 100%	50%	70%	8
25mm, APFSDS-T, M919	Ammunition and Explosives	each	300	250	200	🟨 66%	0%	50%	8

The ammunition was added, but only at a rate of 66% of capacity, and the color depicting the supply level is Amber (below 85% but above 50%).

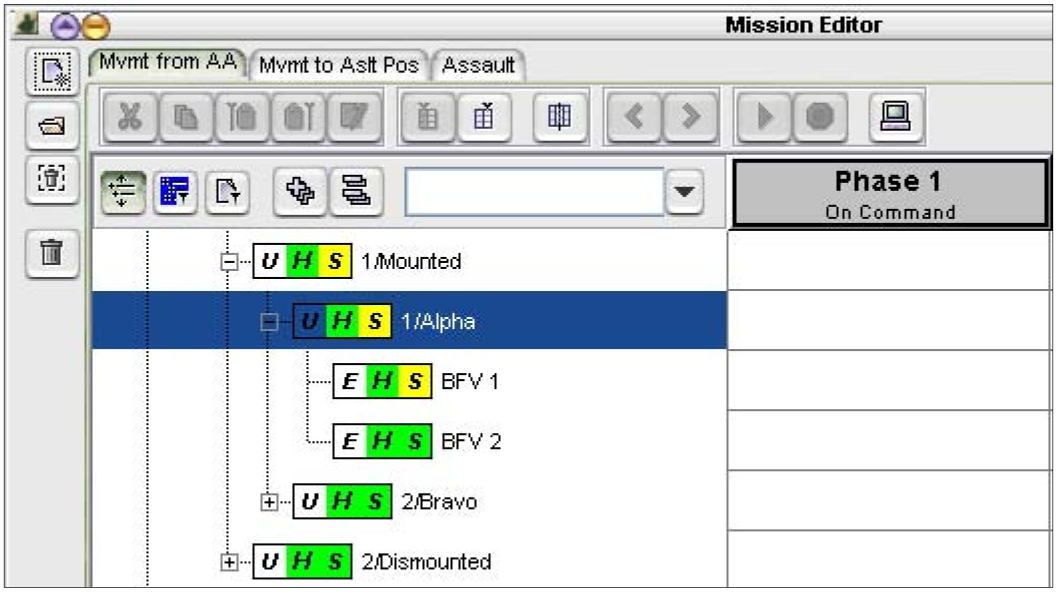
OK
Apply
Reset
1/Alpha:BFV 1

App A. Status Window – Modify the Basic Load

The colors described above are also displayed in the task Organization and Mission Editor Windows.


Task Org
Mission Description

Display	Name	Type
	Top Level	
	S Coalition	
☐	U H S 3/C/1-15 INF	Infantry
☐	U H S 1/Mounted	Infantry
☐	U H S 1/Alpha	Infantry
☑	E H S BFV 1	Bradley IFV M2A2
	E H S BFV 2	Bradley IFV M2A2
☐	U H S 2/Bravo	Infantry
☐	U H S 2/Dismounted	Infantry


Mission Editor
Mvmt from AA
Mvmt to Aslt Pos
Assault
Phase 1
On Command

U H S 1/Mounted
U H S 1/Alpha
E H S BFV 1
E H S BFV 2
U H S 2/Bravo
U H S 2/Dismounted

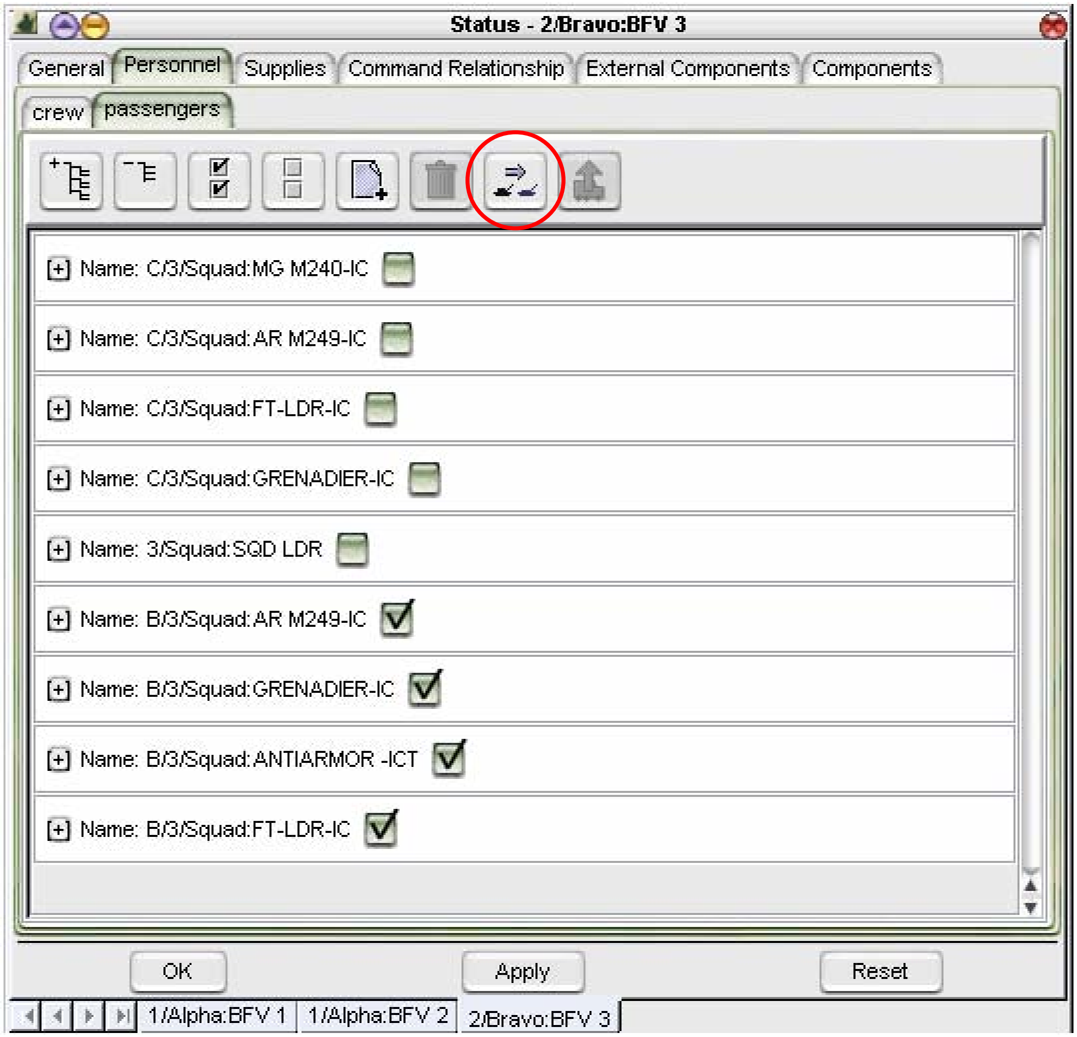
Moving Crew and Passengers

The Status window allows you to reorganize the passengers and crew from one vehicle to another. Normally you would not move the crew, but you could add to them as desired; however, moving passengers between vehicles allows you to establish a load plan to match certain phases of the operation. This becomes imperative when assigning Infantry Squads follow-on tasks after they dismount a vehicle.

This example will move Dismounted Infantry Soldiers from one Bradley Fighting Vehicle (BFV 3) to another (BFV 4)

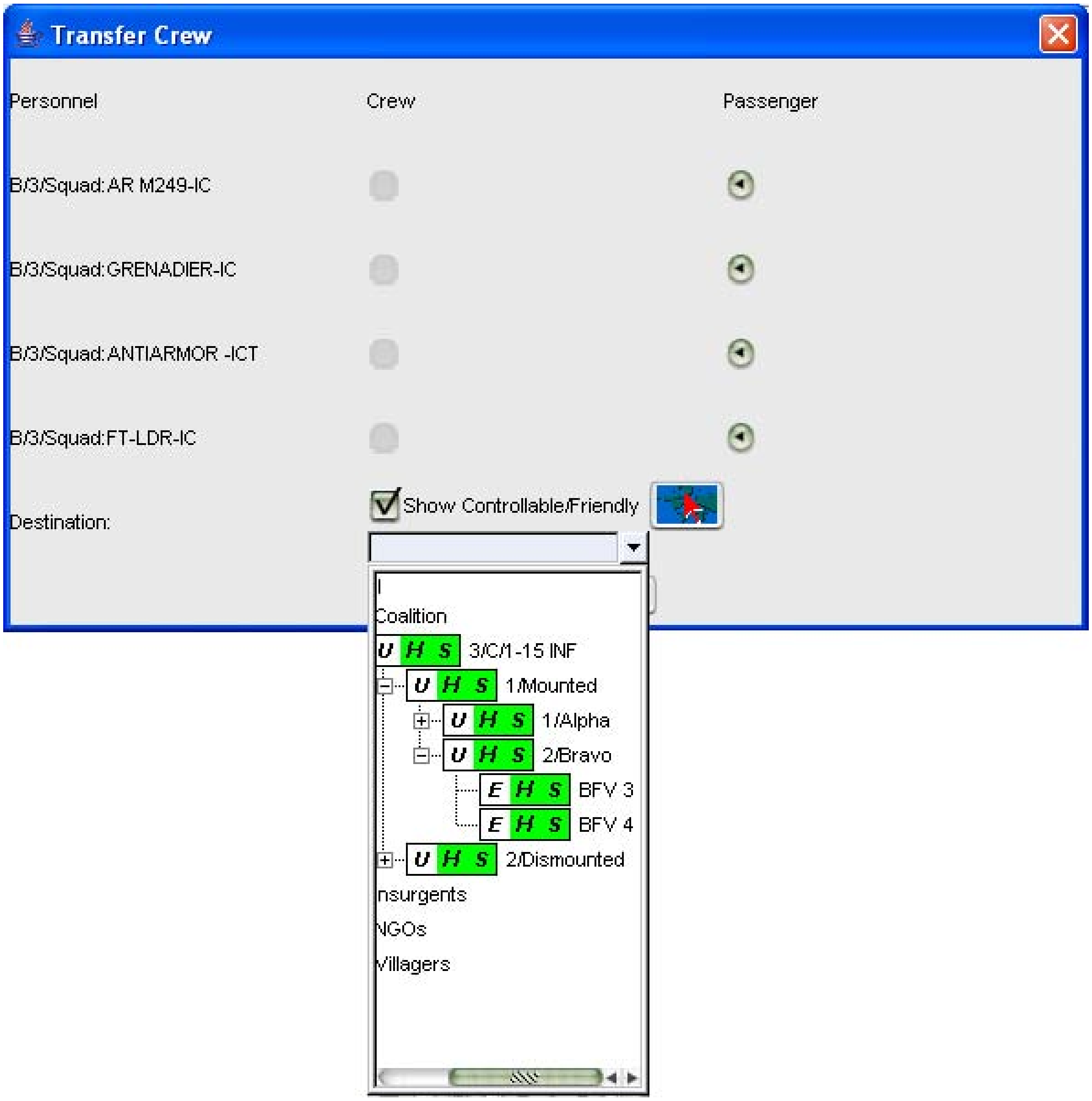
To move the Soldiers;

- LC the Edit button
- LC the empty box at the end of each Soldiers description to insert a checkmark
- LC the Transfer Crew button


Status - 2/Bravo:BFV 3
General
Personnel
Supplies
Command Relationship
External Components
Components
crew
passengers
OK
Apply
Reset
1/Alpha:BFV 1
1/Alpha:BFV 2
2/Bravo:BFV 3

[+] Name: C/3/Squad:MG M240-IC ☐
[+] Name: C/3/Squad:AR M249-IC ☐
[+] Name: C/3/Squad:FT-LDR-IC ☐
[+] Name: C/3/Squad:GRENADIER-IC ☐
[+] Name: 3/Squad:SQD LDR ☐
[+] Name: B/3/Squad:AR M249-IC ☑
[+] Name: B/3/Squad:GRENADIER-IC ☑
[+] Name: B/3/Squad:ANTIARMOR -ICT ☑
[+] Name: B/3/Squad:FT-LDR-IC ☑

The Transfer Crew pop-up window appears with the list of passengers you selected to move. You have 2 options of deciding which vehicle to put them into. You can either select from the drop down list of available vehicle entities, or you can LC the red arrow and LC on the vehicle icon on the PVD screen. The "Show Controllable Friendly" box checked or unchecked does not effect the transfer of Soldiers in the stand alone mode. In the distributed mode only those units that are accessible by the users' computer will be displayed.



Transfer Crew

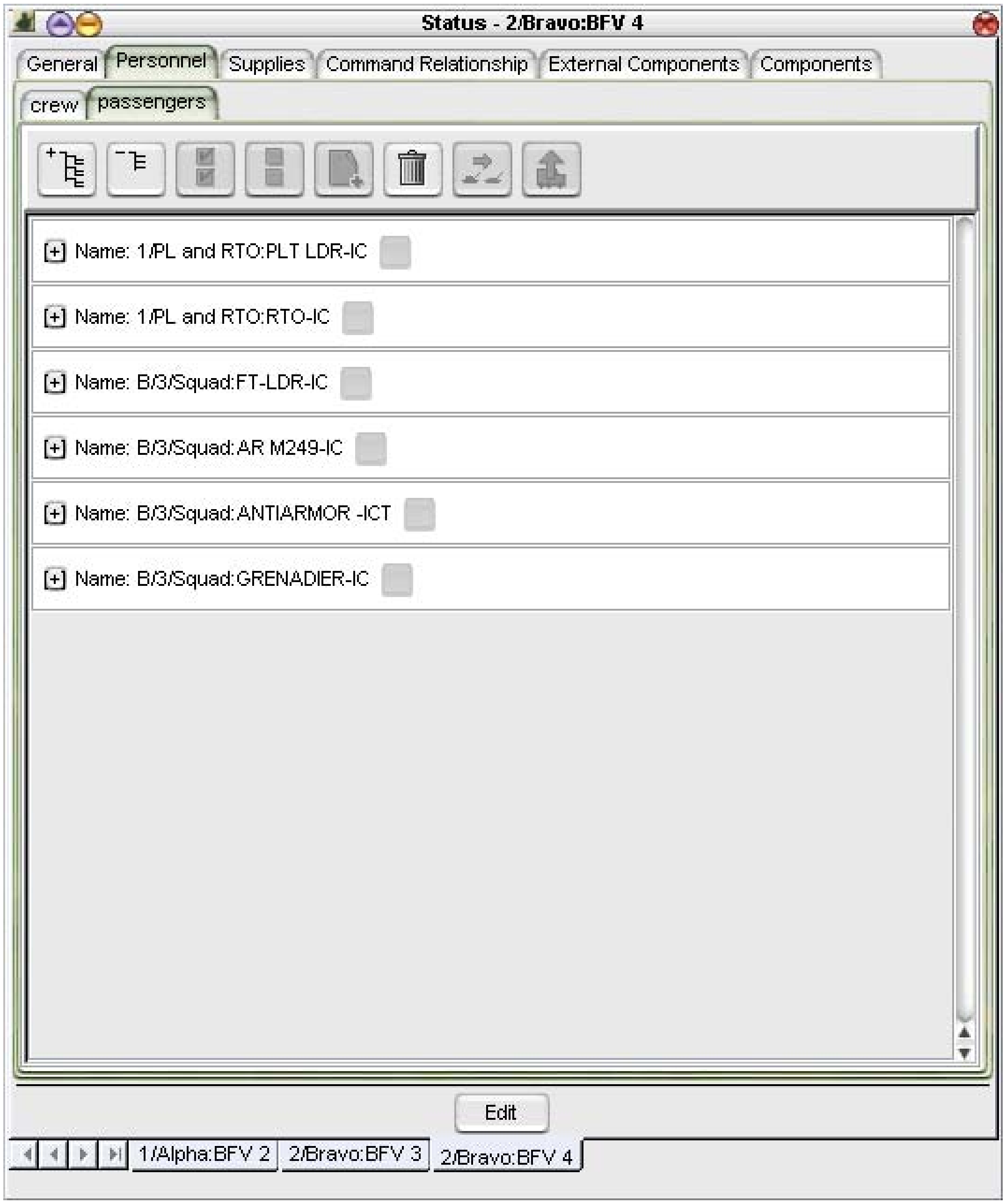
Personnel	Crew	Passenger
B/3/Squad:AR M249-IC	○	●
B/3/Squad:GRENADIER-IC	○	●
B/3/Squad:ANTIARMOR -ICT	○	●
B/3/Squad:FT-LDR-IC	○	●

Destination: ☑ Show Controllable/Friendly

Coalition
U H S 3/C/1-15 INF
U H S 1/Mounted
U H S 1/Alpha
U H S 2/Bravo
E H S BFV 3
E H S BFV 4
U H S 2/Dismounted
nsurgents
NGOs
Villagers

The last step is to LC Apply to initiate the move.

The resultant move will take the passengers out of the vehicle labeled BFV 3 and place them into BFV 4. Compare the screen shot of BFV 4 with the list of selected passengers moved from BFV 3. The selected passengers were added to the existing vehicle passengers.


Status - 2/Bravo:BFV 4
General
Personnel
Supplies
Command Relationship
External Components
Components
crew
passengers
Edit
1/Alpha:BFV 2
2/Bravo:BFV 3
2/Bravo:BFV 4

Name: 1/PL and RTO:PLT LDR-IC ☐

Name: 1/PL and RTO:RTO-IC ☐

Name: B/3/Squad:FT-LDR-IC ☐

Name: B/3/Squad:AR M249-IC ☐

Name: B/3/Squad:ANTIARMOR -ICT ☐

Name: B/3/Squad:GRENADIER-IC ☐

Appendix B

Adding Additional Sides and Defining Side Relationships

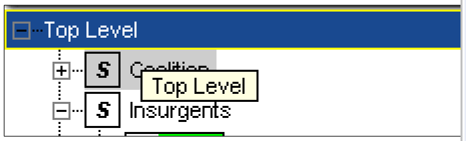
In each defined operating environment there will be multiple factions that have different relationships with each other and the occupying force. These relationships are dynamic and can change on the outcome of any incident. The OneSAF simulation software allows you to add these additional sides and define the relationship with the other factions in the scenario. You can add as many sides as you like, but you are limited to define the side relationship to “Friendly’, “Hostile”, “Neutral”, and “Unknown”.

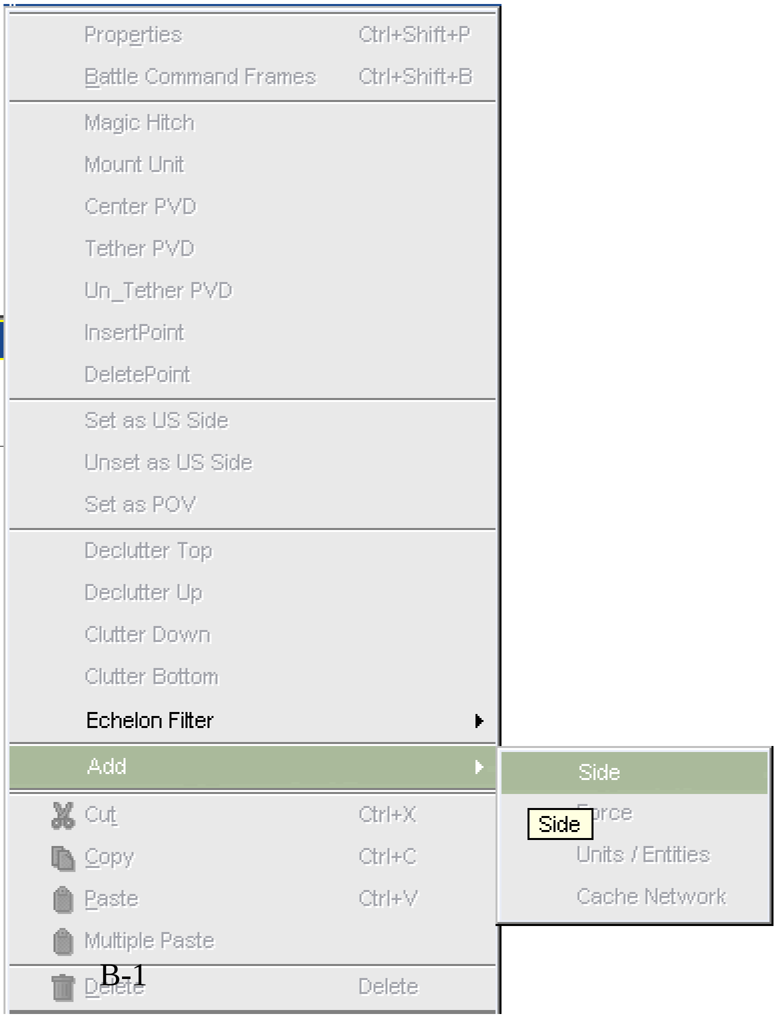
OnsSAF defaults to 2 sides, Coalition and Insurgents, with an already established relationship, “Hostile”. Each side encompasses a major group that will all work under the same side relationship irregardless of the doctrine they fight under. You can add multiple “Forces” (e.g. US Army, USMC, Iraqi Army, etc) that work under their own doctrine; but all will still maintain the “Hostile” relationship with the Insurgent side.

This lesson will teach you how to add 1 additional side. Repeat these steps to add additional sides.

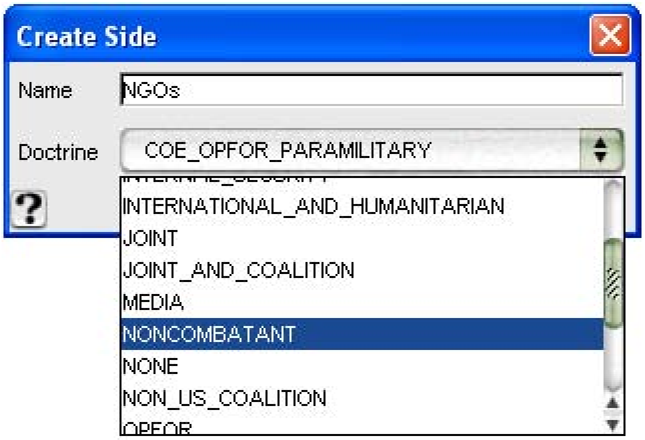
You can only add an additional side in the “Task Organization” window. Sides must be added at the “Top Level” of the window. You cannot add a side to another side.

- LC on “Top Level” to highlight, then RC.
- Mouse over “Add”, and LC on “Side”.


Top Level
Coalition
Top Level
Insurgents


Properties Ctrl+Shift+P
Battle Command Frames Ctrl+Shift+B
Magic Hitch
Mount Unit
Center PVD
Tether PVD
Un_Tether PVD
InsertPoint
DeletePoint
Set as US Side
Unset as US Side
Set as POV
Declutter Top
Declutter Up
Clutter Down
Clutter Bottom
Echelon Filter
Add
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Multiple Paste
Delete Delete
Side
Force
Side
Units / Entities
Cache Network

The “Create Side” pop-up window appears.

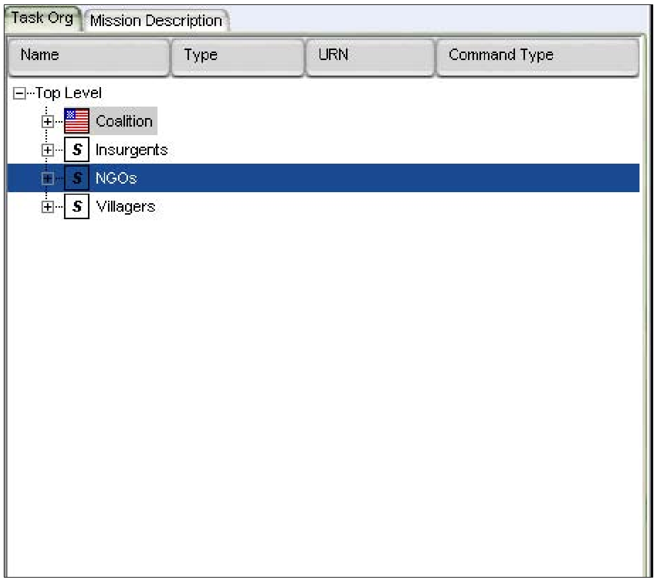

Create Side
?
INTERNAL_SECURITY
INTERNATIONAL_AND_HUMANITARIAN
JOINT
JOINT_AND_COALITION
MEDIA
NONCOMBATANT
NONE
NON_US_COALITION
OPFOR

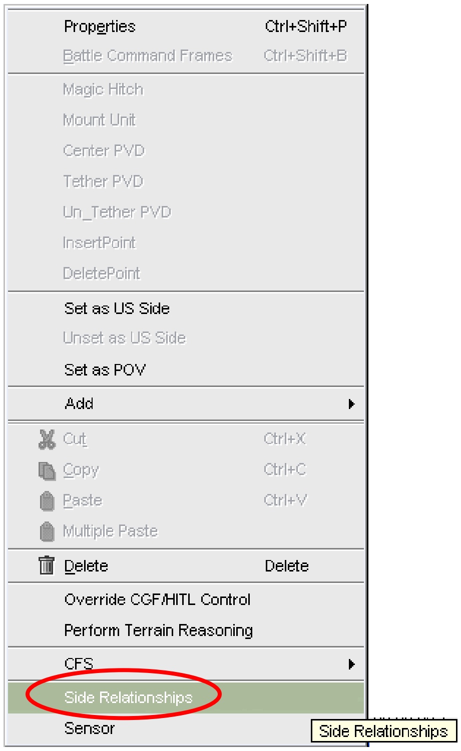
Name: NGOs
Doctrine: COE_OPFOR_PARAMILITARY

- Name the side by typing in the name window.
- LC the drop-down “Doctrine” window to expose the list of 27 doctrines you can choose from.
- LC to highlight and select the doctrine you have chosen.
- LC “Apply”.
- LC the red “X” to close the pop-up window.

Once you have added the new side it is time to define its relationship with the other sides in the simulation scenario. To define the relationship,

- LC on the side to be selected.
- RC on the highlighted side.
- Mouse over “Side Relationships” and LC.


Task Org
Mission Description
Name
Type
URN
Command Type
Top Level
Coalition
S Insurgents
S NGOs
S Villagers

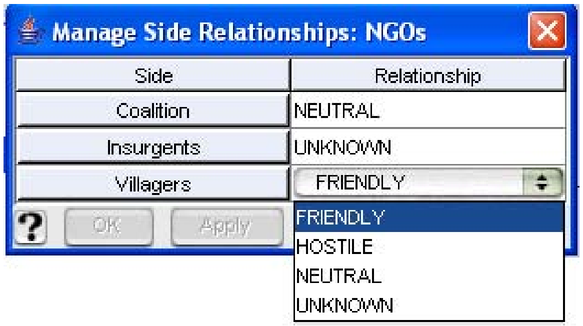

Properties Ctrl+Shift+P
Battle Command Frames Ctrl+Shift+B
Magic Hitch
Mount Unit
Center PVD
Tether PVD
Un_Tether PVD
InsertPoint
DeletePoint
Set as US Side
Unset as US Side
Set as POV
Add
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Multiple Paste
Delete Delete
Override CGF/HITL Control
Perform Terrain Reasoning
CFS
Side Relationships
Sensor
Side Relationships

The “Manage Side Relationships” pop-up window will appear. The window depicts all of the sides available within the current simulation scenario. The window is broken into two columns, “Side” and “Relationship”. The side selected is listed in the heading of the pop-up window; the remaining sides are listed in the “Side” column. Each cell located in the “Relationship” column has a drop-down menu that gives you the choice between “Friendly”, “Hostile”, “Neutral”, and “Unknown”.

The menu below shows how to define/change the side relationships with NGOs

To change the relationship

- LC the cell opposite the desired side.
- Mouse over one of the four choices and LC.
- LC “Apply”.
- LC either “Cancel” or the red “X”.



Side	Relationship
Coalition	NEUTRAL
Insurgents	UNKNOWN
Villagers	FRIENDLY

When choosing side relationships it is important to remember that when sides/forces/units/entities with hostile or unknown relationships come into contact with each other gunfire will ensue based on the rules of engagement selected.

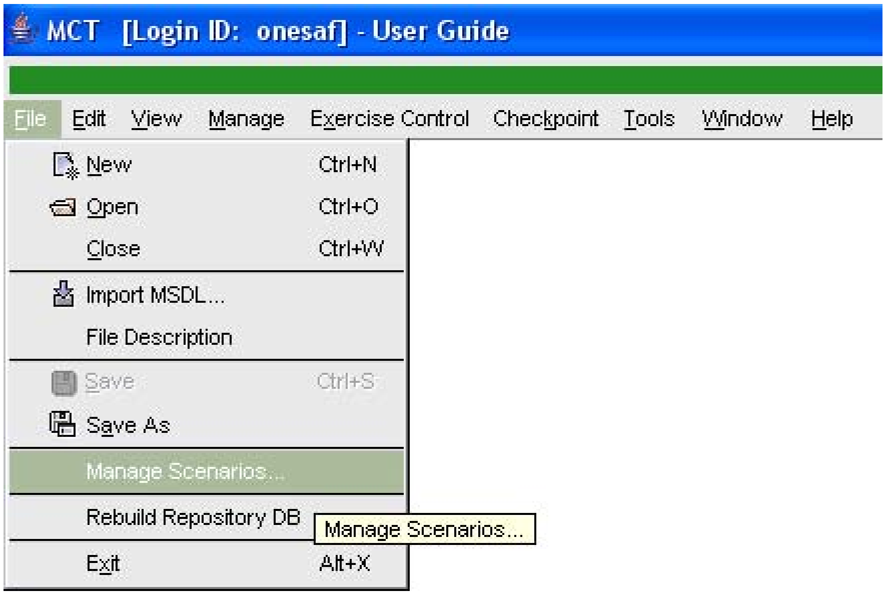
Appendix C

Deleting a Scenario

Deleting scenarios involves two processes; deleting the scenario from the scenario folder, and rebuilding the repository database to eliminate the scenario name from the scenario selector list.

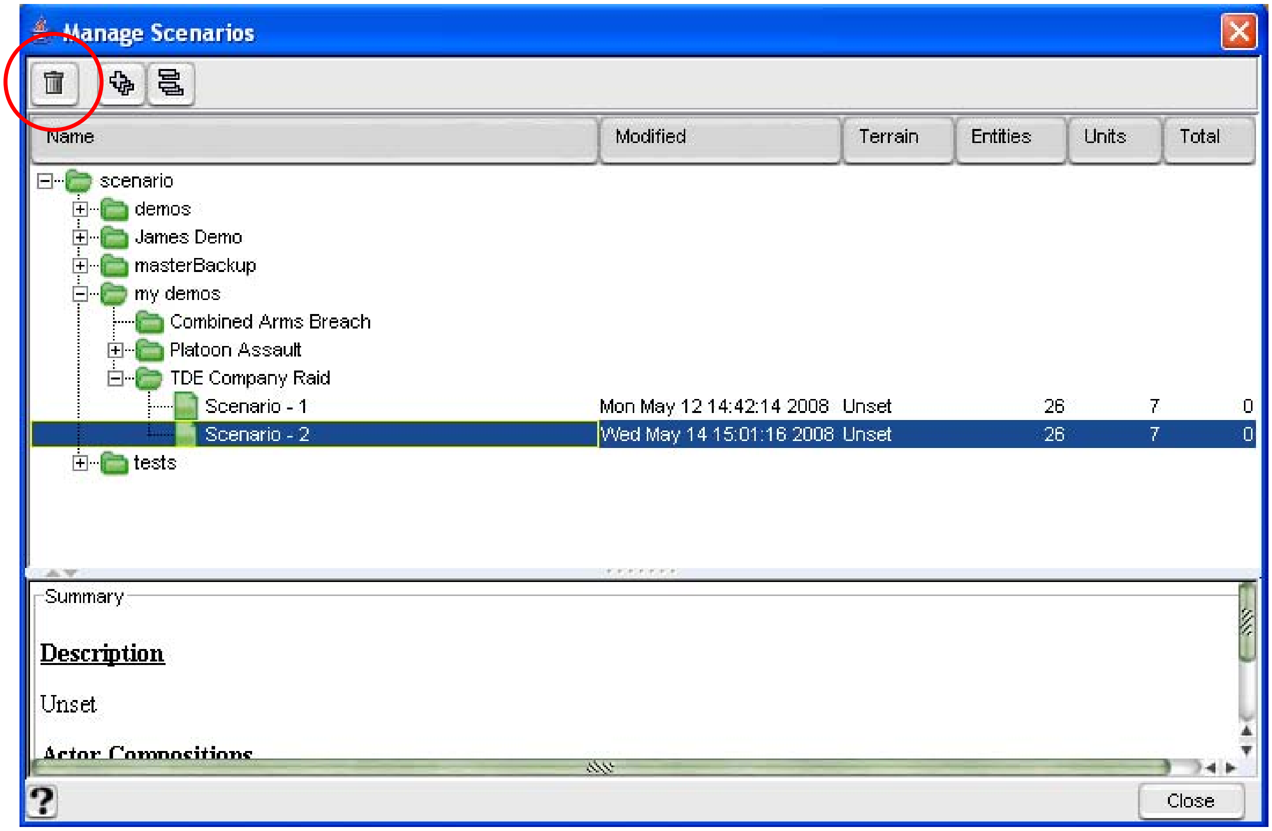
The first process is similar to deleting a file from any Windows™ folder.

- LC File on the MCT toolbar
- Mouse over Manage Scenarios and LC


MCT [Login ID: onesaf] - User Guide
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
New Ctrl+N
Open Ctrl+O
Close Ctrl+W
Import MSDL...
File Description
Save Ctrl+S
Save As
Manage Scenarios...
Rebuild Repository DB
Exit Alt+X
Manage Scenarios...

App C. Deleting a Scenario

The Manage Scenarios pop-up window will appear populated with all the scenario folders available.



Name	Modified	Terrain	Entities	Units	Total
scenario					
demos					
James Demo					
masterBackup					
my demos					
Combined Arms Breach					
Platoon Assault					
TDE Company Raid					
Scenario - 1	Mon May 12 14:42:14 2008	Unset	26	7	0
Scenario - 2	Wed May 14 15:01:16 2008	Unset	26	7	0
tests					

Summary

Description

Unset

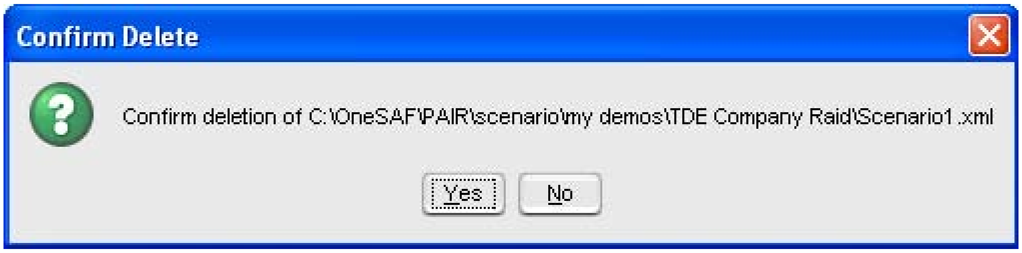
Actor Compositions

Expand each folder far enough to locate the scenario you wish to delete. In this example, Scenario 2 of the TDE Company Raid will be deleted.

- LC the name of the scenario to highlight
- LC the delete button (Trash Can) located in the upper left corner of the window

The Confirm Delete pop-up window will appear

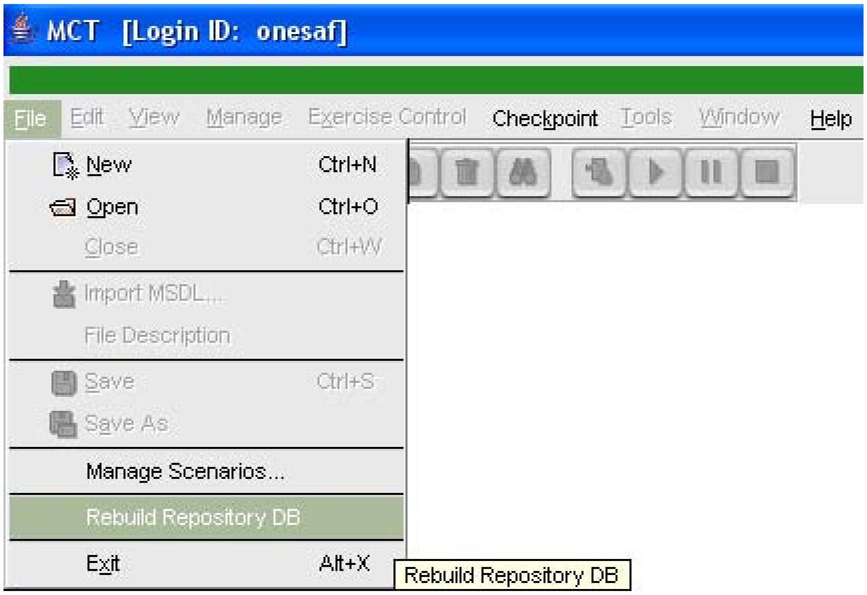
- LC the Yes button.



Confirm deletion of C:\OneSAF\PAIR\scenario\my demos\TDE Company Raid\Scenario1.xml

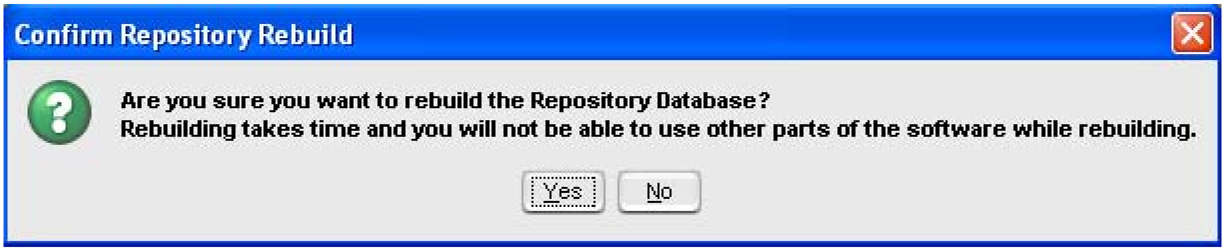
The scenario is still listed in the Scenario Selector window, but is not available for selection. To erase the deleted scenarios from the scenario selector window you must rebuild the repository database. The process will import any new scenarios and update the scenario selector with only the current scenarios available. To rebuild the repository database;

- LC File on the MCT toolbar
- Mouse over Rebuild Repository Database and LC


MCT [Login ID: onesaf]
File
Edit
View
Manage
Exercise Control
Checkpoint
Tools
Window
Help
New Ctrl+N
Open Ctrl+O
Close Ctrl+W
Import MSDL...
File Description
Save Ctrl+S
Save As
Manage Scenarios...
Rebuild Repository DB
Exit Alt+X
Rebuild Repository DB

The Confirm Repository Rebuild pop-up window will appear

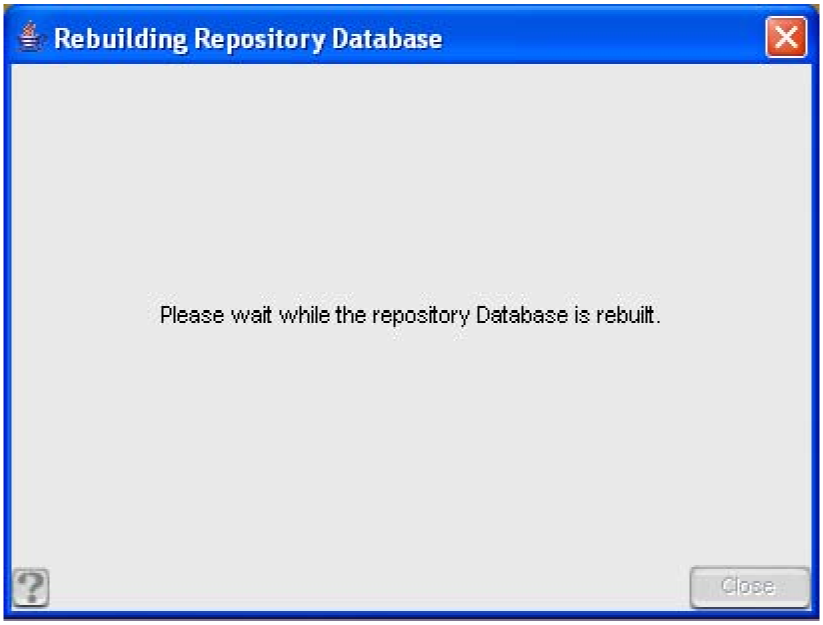
- LC the Yes button


Confirm Repository Rebuild

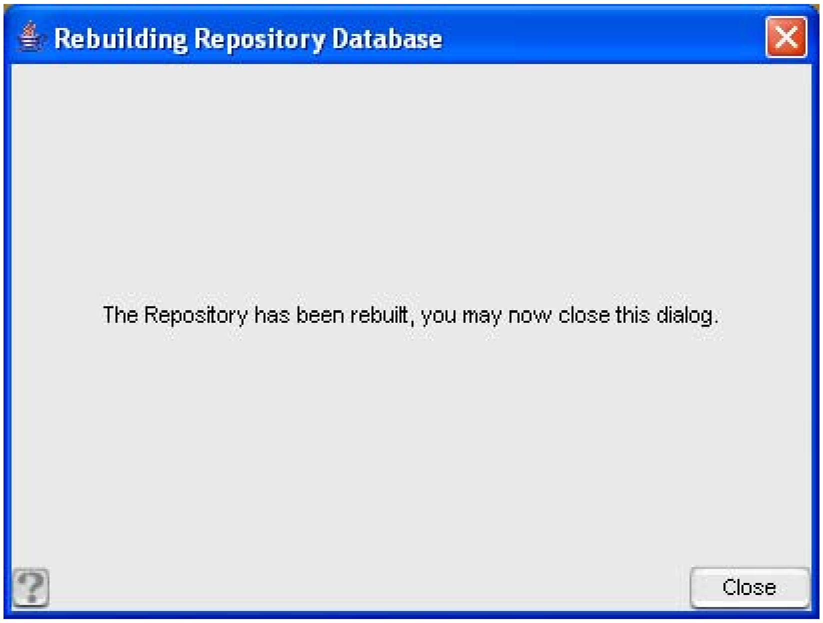
Are you sure you want to rebuild the Repository Database?
Rebuilding takes time and you will not be able to use other parts of the software while rebuilding.

Yes
No

The Rebuilding Repository Database window will appear stating the database is being rebuilt. It will stay that way until the statement changes to "… has been built", this normally takes a few minutes.


Rebuilding Repository Database
Close

Please wait while the repository Database is rebuilt.


Rebuilding Repository Database
Close

The Repository has been rebuilt, you may now close this dialog.

- LC the Close button

The Scenario Selector window will no longer display the scenario that has been deleted.

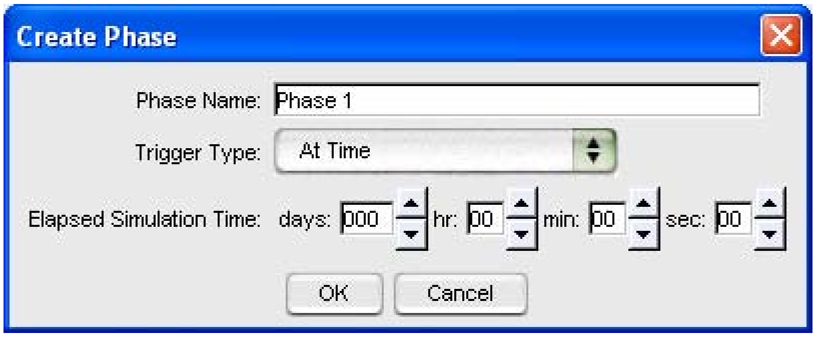
Appendix D

Triggers

OneSAF has 5 triggers available to sequence events and behaviors. These triggers are "At time", "Completion of Previous", "On Command", "Phase Line Crossed", and "Schedule". The "Assign tasks to Entities and Units" section of the user guide describes the "Completion of Previous" and "On Command" triggers. This appendix will cover the remaining triggers.

The "At Time" trigger fires when the elapsed simulation time reaches the selected time. This trigger can be used for time phased events

- LC the trigger drop down menu.
- Mouse over "At Time" and LC.
- Change "Days", "Hours", "Minutes", or "Seconds" using the up and down arrows until you reach your desired time.



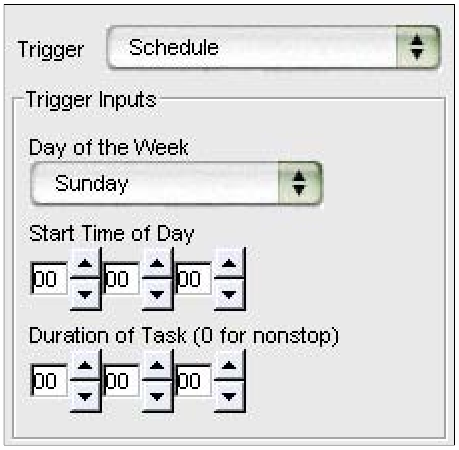
Phase Name: Phase 1

Trigger Type: At Time

Elapsed Simulation Time: days: 000 hr: 00 min: 00 sec: 00

The "Schedule" trigger fires on a particular day of the week at a particular time of the day. This trigger is usually used during large unit simulation.

- LC the trigger drop down menu.
- Mouse over "Schedule" and LC.
- Change "Day of the Week", "Start Time of Day", or "Duration of Task" using the up and down arrows until you reach your desired date and time.



Trigger: Schedule

Trigger Inputs

Day of the Week: Sunday

Start Time of Day: 00 00 00

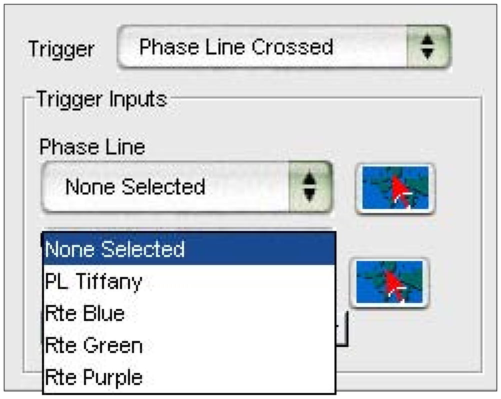
Duration of Task (0 for nonstop): 00 00 00

The “Phase Line Crossed” trigger fires when the selected unit or entity crosses the selected phase line. This trigger can be used to trigger separate phases of a mission based on movement of units, or to detonate Improvised Explosive Devices.

- LC the trigger drop-down menu.
- Mouse over “Phase Line Crossed” and LC.

- LC the “Phase Line” drop-down menu.
- Mouse over the desired phase line and LC.

You must have phase lines drawn and named on the PVD screen first. Those phase lines will populate the list as seen here.



Trigger: Phase Line Crossed

Trigger Inputs

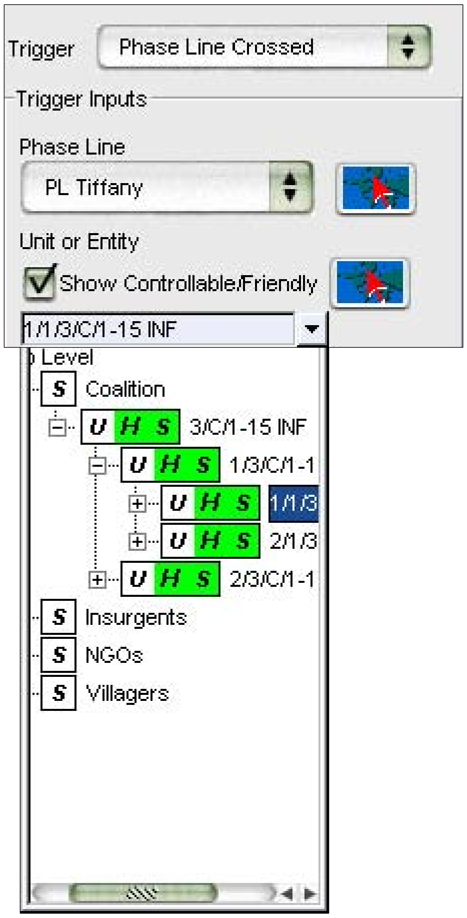
Phase Line: None Selected

None Selected
PL Tiffany
Rte Blue
Rte Green
Rte Purple

- LC the “Unit or Entity” drop-down menu.

The units or entities available for selection are listed in expandable tree form as found in the Task Organization window.

- Expand the appropriate side until you reach the desired unit/entity.
- LC the unit/entity.



Trigger: Phase Line Crossed

Trigger Inputs

Phase Line: PL Tiffany

Unit or Entity: ☑ Show Controllable/Friendly

1/1/3/C/1-15 INF

Level
S Coalition
U H S 3/C/1-15 INF
U H S 1/3/C/1-1
U H S 1/1/3
U H S 2/1/3
U H S 2/3/C/1-1
S Insurgents
S NGOs
S Villagers

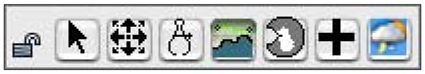
Appendix E

Scenario Development Tools

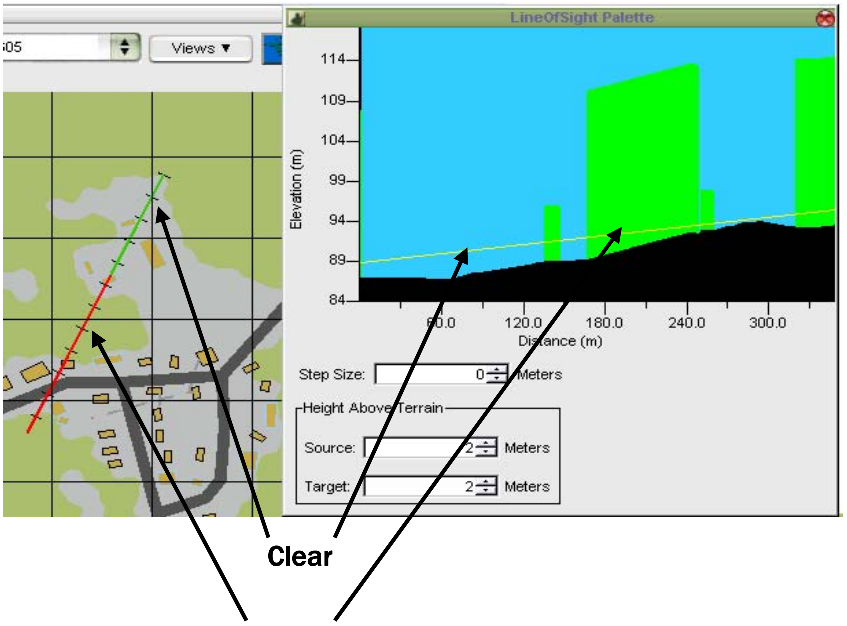
There are currently 3 tools available to the user to assist in the development of the scenarios. These tools, Line-of-Sight (LOS), Area-of-Sight (AOS), and Distance, give the user the tools necessary to help decide where to place entities/units, or which route to use to move them from point A to B.

The LOS tool is used to show the line of sight from the entities/units perspective based on the 3-D terrain database and associated buildings. The line of sight can be adjusted in relation to the source and the target. The steps to activate the LOS tool are described below.

- LC the LOS tool button located on the PVD toolbar.



- LC and ***hold*** at your desired starting position. Drag to the desired end point and release



Step Size: 0 Meters

Height Above Terrain

Source: 2 Meters

Target: 2 Meters

Clear

Blocked

The LOS results are displayed directly on the map. The line is *green* when the LOS is clear and *red* where the LOS is blocked.

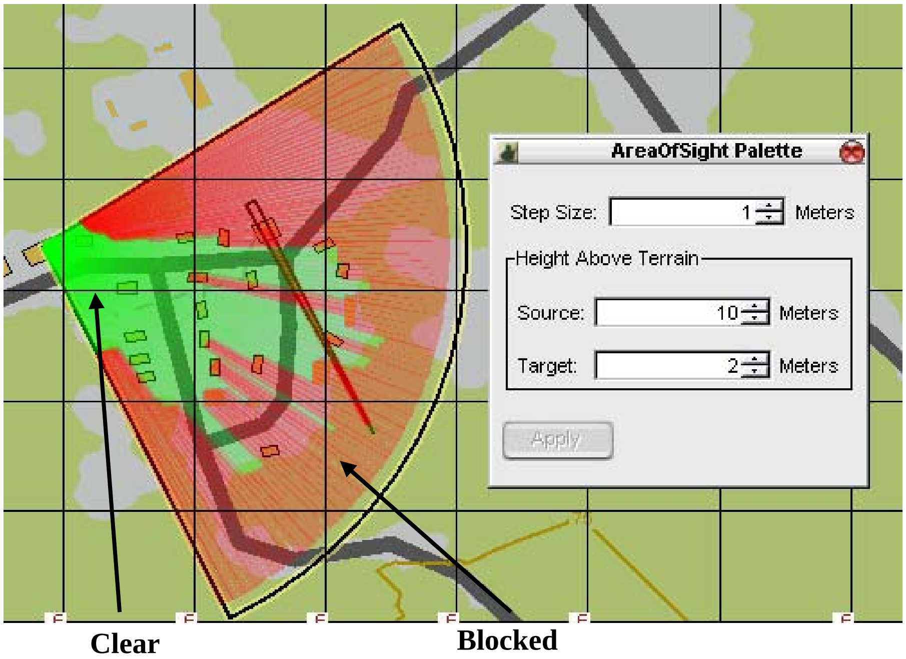
The LOS Palette displays the same results; however, here the user has the added value of the 3-D terrain. The *solid green* represents the blocked view. The x and y axis display the distance and elevation from the Soldier-to-target perspective.

Hit **ESC** to clear the tool.

The AOS tool is used to show the area of sight in increments of 1 to 360 degrees from the entities/units perspective based on the 3-D terrain database and associated buildings. The area of sight can be adjusted in relation to the source and the target. The steps to activate the AOS tool are described below.

- LC the **AOS** button on the PVD toolbar
- Position the **Arrow Head** at the desired starting location
- LC to anchor the display
- Move the **Arrow Head** to the desired end point
- LC to anchor the display
- Move the **Arrow Head** to describe the size of the area to cover
- LC to complete

- Press **ESC** to clear.


AreaOfSight Palette

Step Size: 1 Meters

Height Above Terrain

Source: 10 Meters

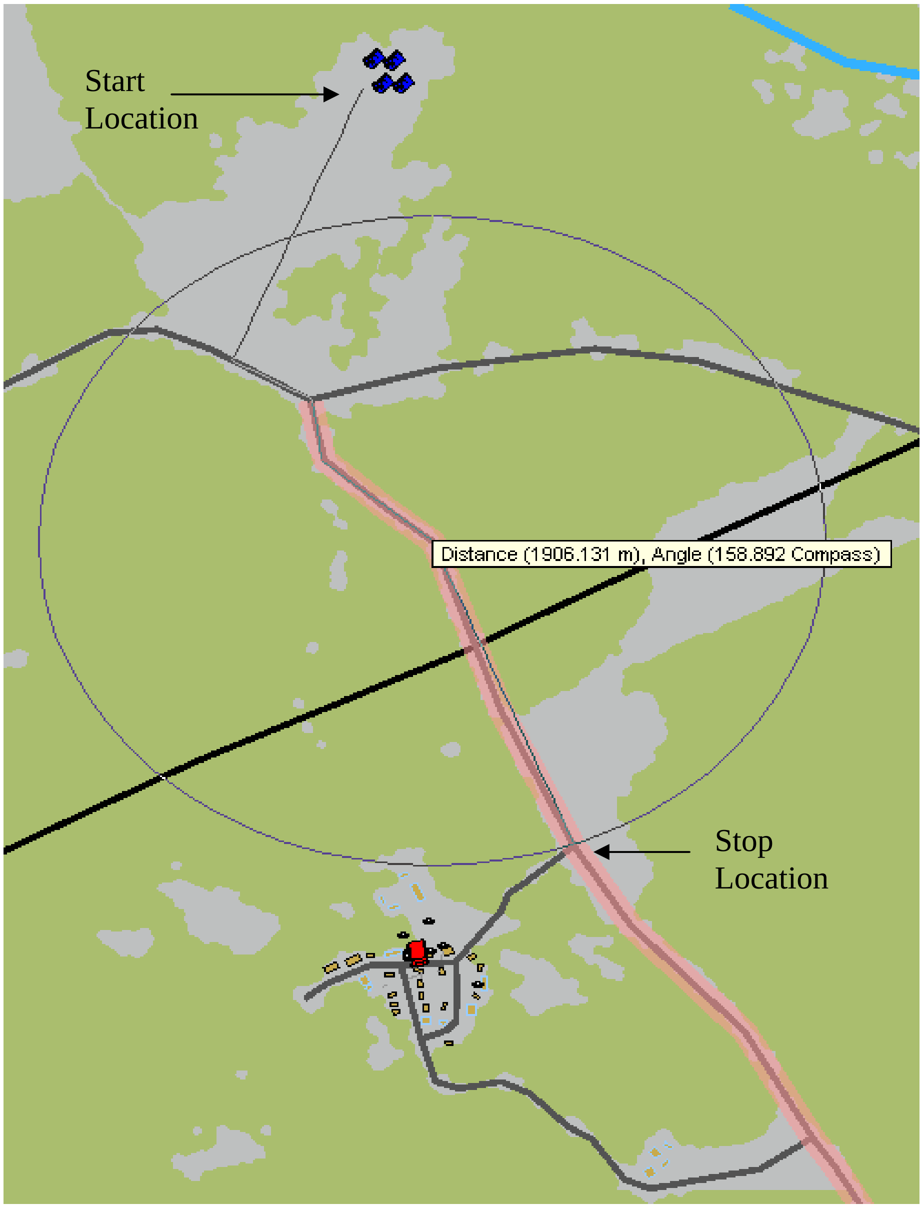
Target: 2 Meters

The AOS results are displayed directly on the PVD screen. The *green* displays a clear AOS and the *red* displays a blocked AOS. The height of the source perspective can be adjusted by changing the height in meters on the AOS palette and then LC the Apply button. The height of the target can also be adjusted. The heights of both the source and target should be adjusted when acquiring AOS from different floors of buildings. The step size does not seem to affect the AOS in version 2.0.

Distance Tool

The Distance tool gives you the ability to measure straight line distance. The results of the measurement are displayed in meters and the angle of deflection is displayed in degrees. When combined with the 3-D terrain, this tool can be used for time/distance analysis during route development. The steps to activate the distance tool are described below.

- LC the distance tool button on the PVD tool bar
- Position the **Arrow Head** at the start location
- LC and drag the **Arrow Head** to the stop location and LC again
- Press **ESC** to clear



```
Distance (1906.131 m), Angle (158.892 Compass)
```

<u>In order to measure a route you must LC on each leg of the route</u>

The tool will automatically add the distance of each leg of the route and display the sum of each leg. The angle of deflection displayed changes for each leg of the route.

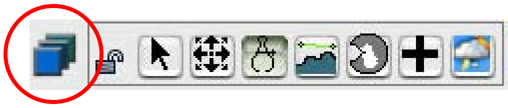
In this example, 1906 meters is the distance from the start location next to the 4 Bradley Fighting Vehicles - to the stop location at the road intersection heading towards the Shugart-Gordon MOUT Complex. The 159 degree angle of deflection is the azimuth for the last leg of the route.

Layer Controls

The Layer Control tool allows you to select various layers to be displayed or hidden on the PVD map. This ability allows you to de-clutter the PVD screen in order to observe the development and execution of the scenario.

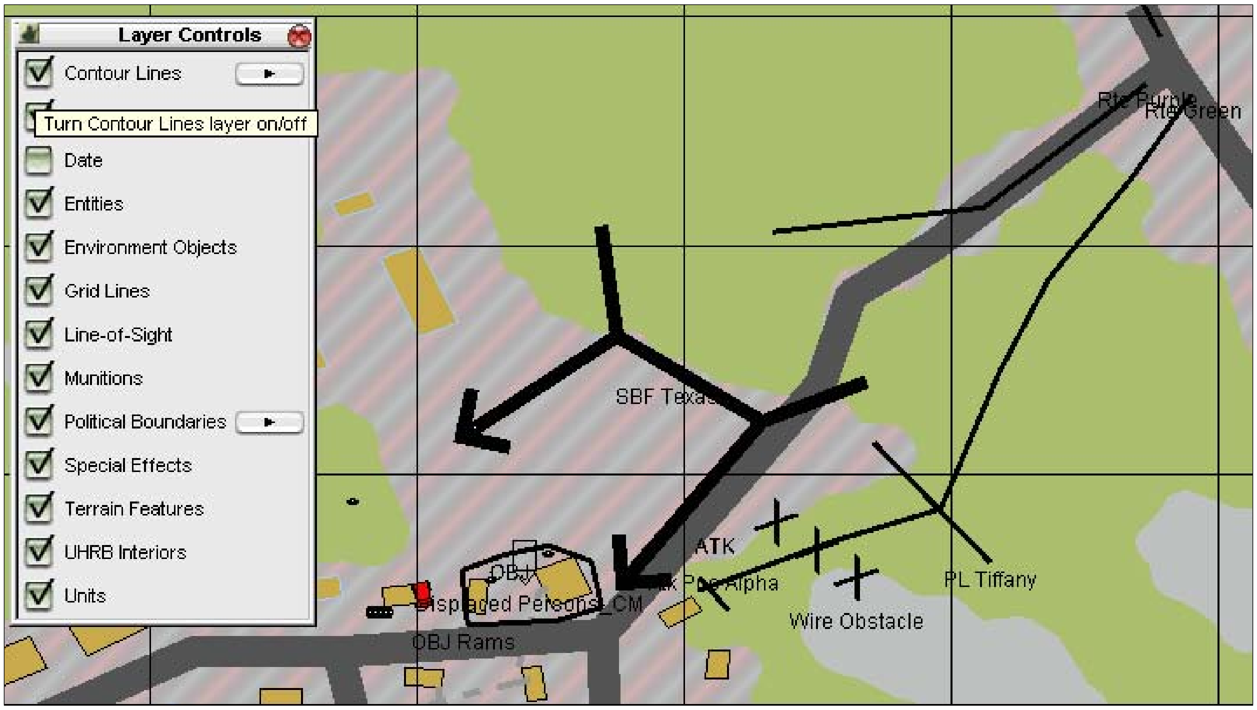
To activate the tool

- LC on the Layer Control button next to the PVD tool bar



Activating the tool displays the Layer Control pop-up window as seen below. To display each layer ensure the check mark is visible next to each layer desired. The 2 examples below depict the same scene, the upper has the 'contour lines', 'control measures', and 'grid lines' layers applied, the lower has the same layers removed.

PVD with layers

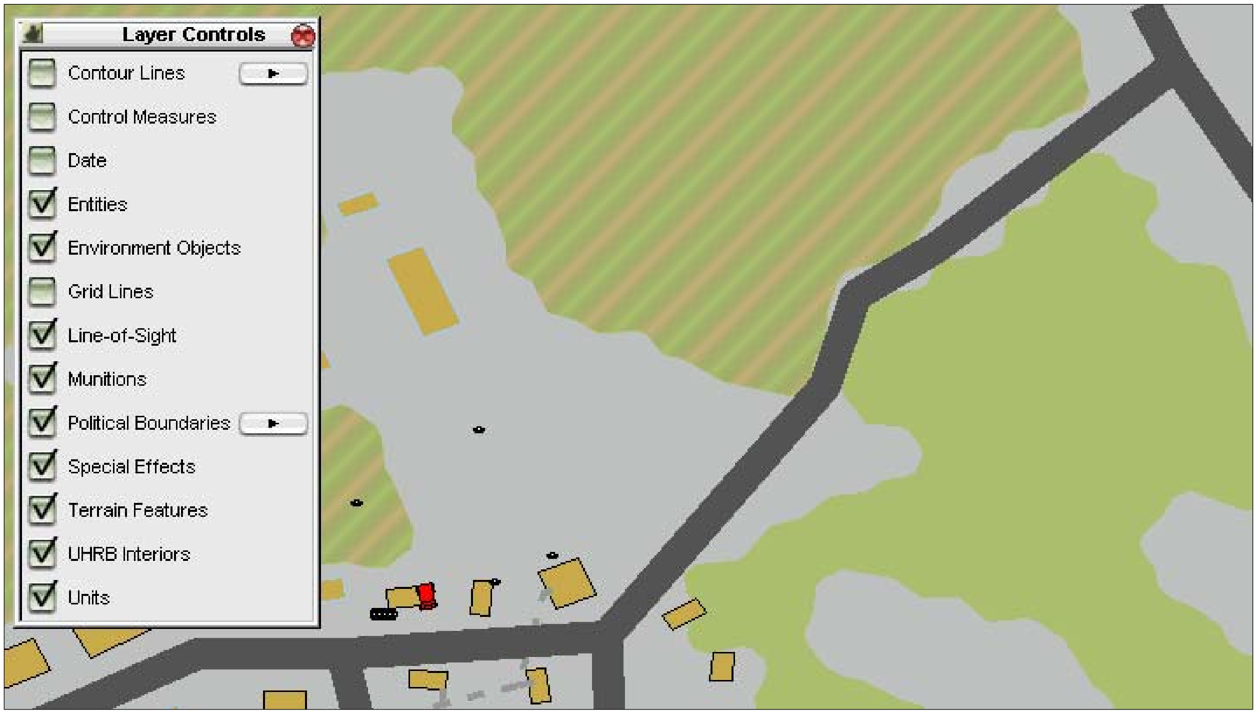


Layer Controls

☑ Contour Lines
☑ Turn Contour Lines layer on/off
☐ Date
☑ Entities
☑ Environment Objects
☑ Grid Lines
☑ Line-of-Sight
☑ Munitions
☑ Political Boundaries
☑ Special Effects
☑ Terrain Features
☑ UHRB Interiors
☑ Units

Rte Purple
Rte Green
SBF Texas
ATK
OBJ
Atk Pos Alpha
PL Tiffany
Displaced Persons_CM
Wire Obstacle
OBJ Rams

PVD without layers



- ☐ Contour Lines
- ☐ Control Measures
- ☐ Date
- ☑ Entities
- ☑ Environment Objects
- ☐ Grid Lines
- ☑ Line-of-Sight
- ☑ Munitions
- ☑ Political Boundaries
- ☑ Special Effects
- ☑ Terrain Features
- ☑ UHRB Interiors
- ☑ Units

These layers can be turned off and on while the scenario is running. This becomes imperative when a 155mm Howitzer Battery fires white phosphorus rounds at a target and the PVD screen becomes blanketed with simulated smoke.

Turning off the “Environment Objects” will eliminate the smoke from the screen.

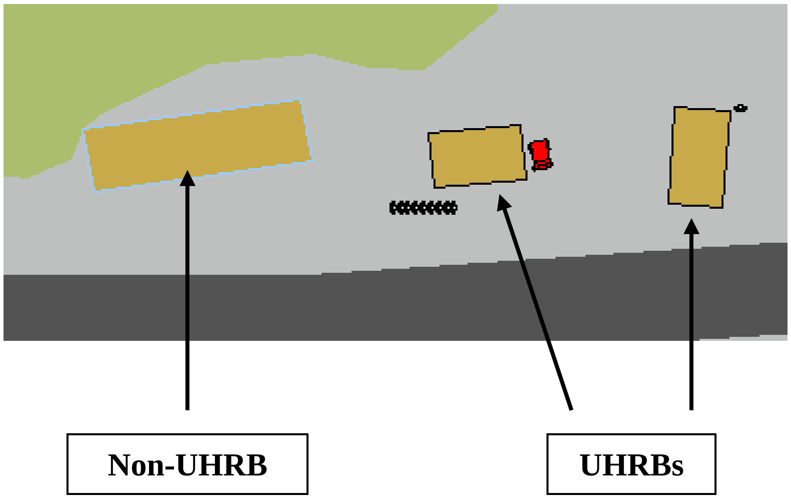
There are some layers you do not want to turn off;

- Turning off the “Entities” will eliminate all entities (personnel and vehicles) from the screen. All units and entities will disappear.
- Turning off “Terrain Features” will leave you with a blank PVD screen. No roads, clearings, woodland, or buildings will be visible.
- Turning off “UHRB Interiors” eliminates the opportunity to monitor a squad’s movement inside a building.

Appendix F

Ultra High Resolution Buildings

OneSAF software has the capability of depicting single or multi floor buildings, called Ultra High Resolution Buildings (UHRB), that are accessible to entities and react to the different munitions available in the simulation. These buildings are comprised of different floor plans, entry points, windows, and furniture layouts. Currently in OneSAF version 2.0, there are only 2 terrain databases that have the UHRBs, the Southwest Asia and the JRTC databases. The buildings are identified by the thin solid black line outlining the building.



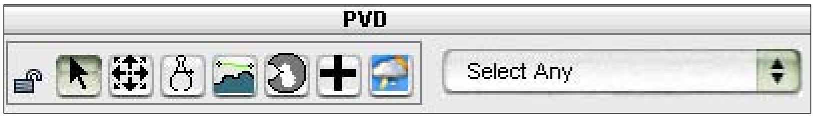
In the JRTC terrain database, all of the UHRBs are located in the Shugart–Gordon MOUT site vicinity MGRS grid 15R VQ 88635 41419.

In the Southwest Asia terrain database, the UHRBs are spread out around the Baghdad International Airport (38S MB 28485 80693) and the Green Zone (38S MB 44381 85495).

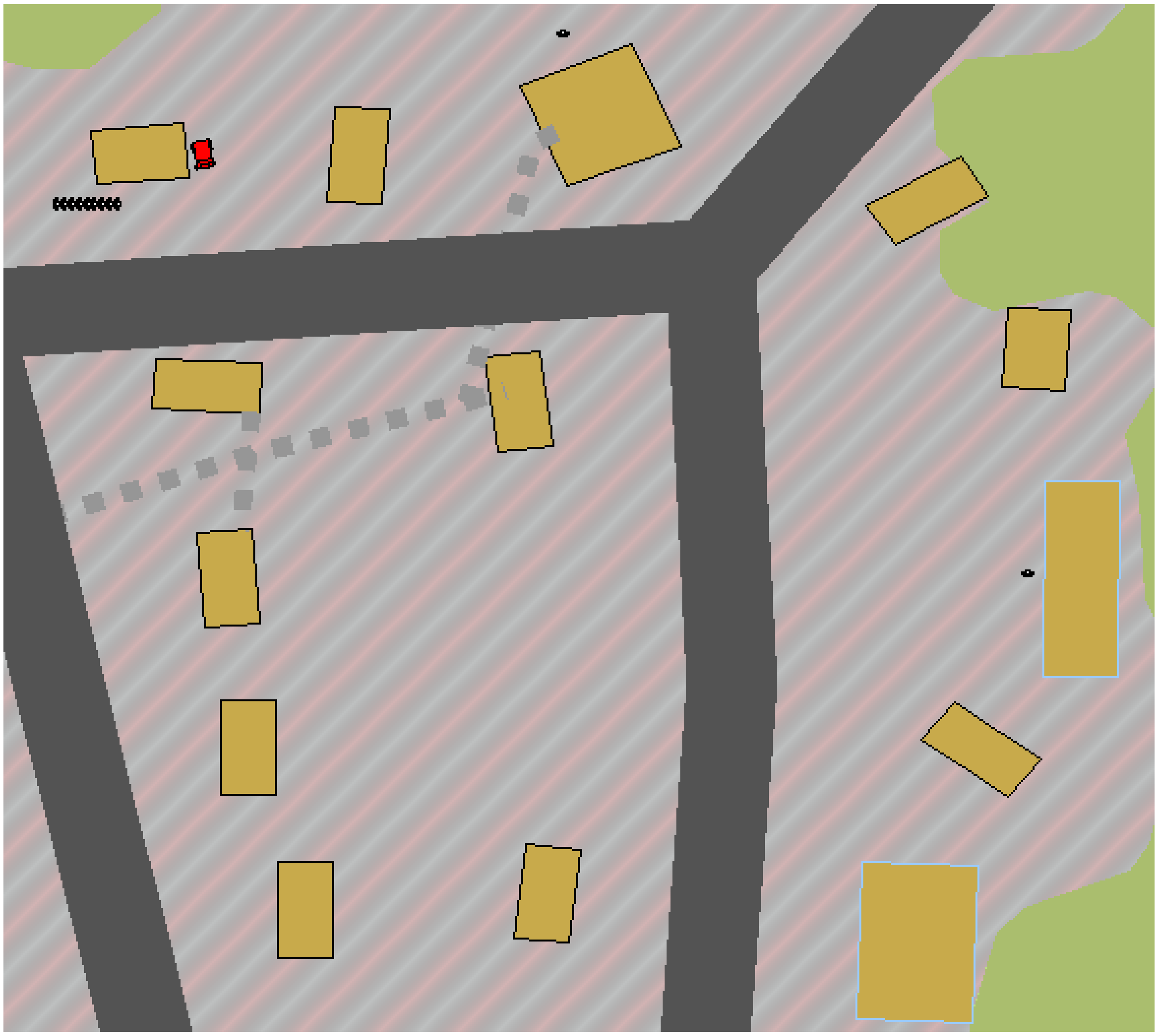
The UHRBs, used in conjunction with the behaviors Assault Building, Assault Buildings in Area, or Clear Room, allowing you to plan and execute military operations in urban terrain (MOUT). The UHRBs give you the ability to place entities inside the buildings on multiple floors, and to watch the actions as they take place inside the rooms. The entity's line of sight and area of sight are affected by the walls, windows, and doors that comprise the building. Entities can move into and out of the buildings based on the behaviors assigned, and will engage the assaulting units based on the side relationships assigned.

Accessing UHRBs

To access the UHRBs you must first change the drop down menu next to the PVD toolbar from "Select Actors" to "Select Any".



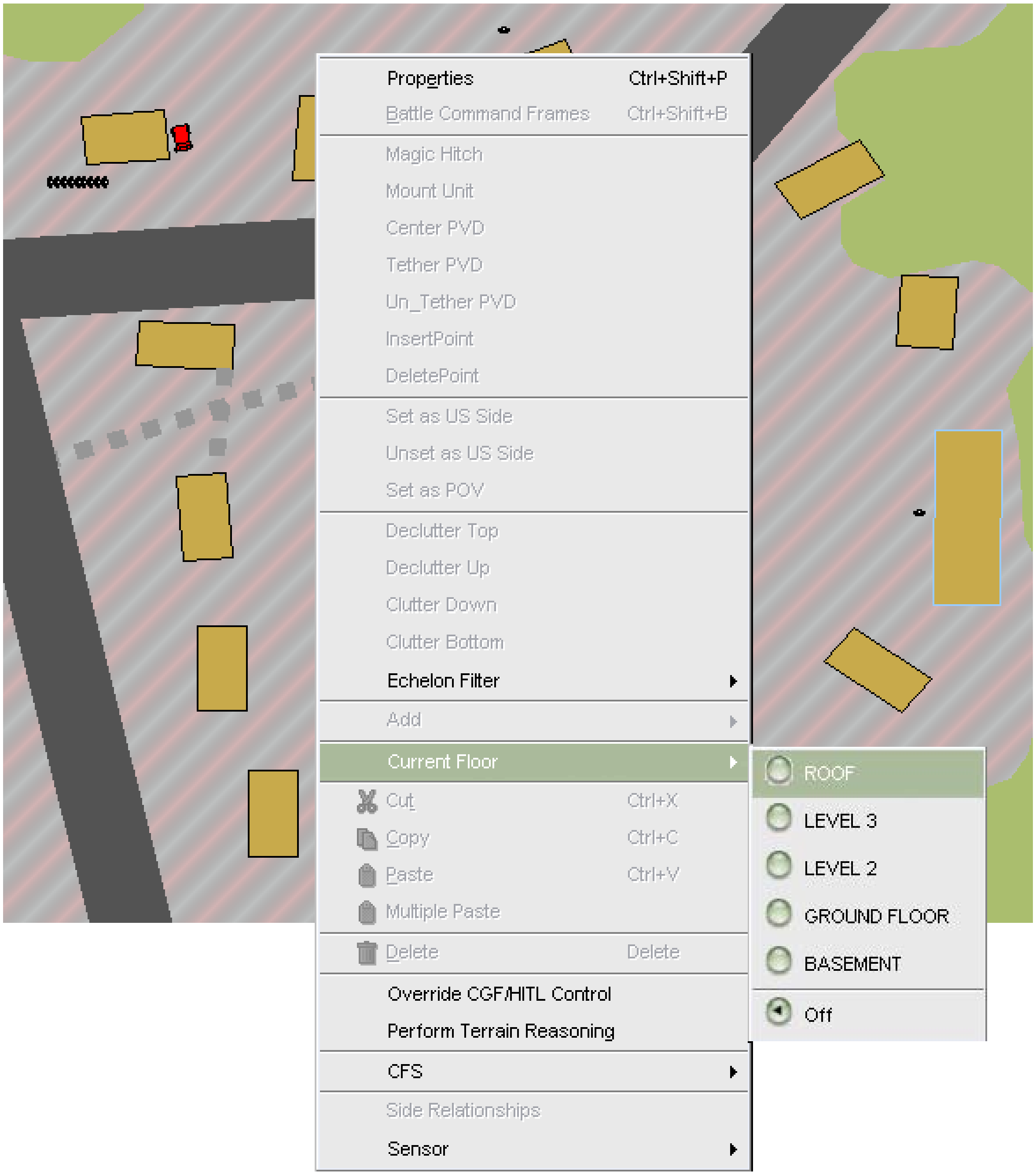
Using the available PVD tools scroll or pan the map until you identify the UHRB you would like to access.



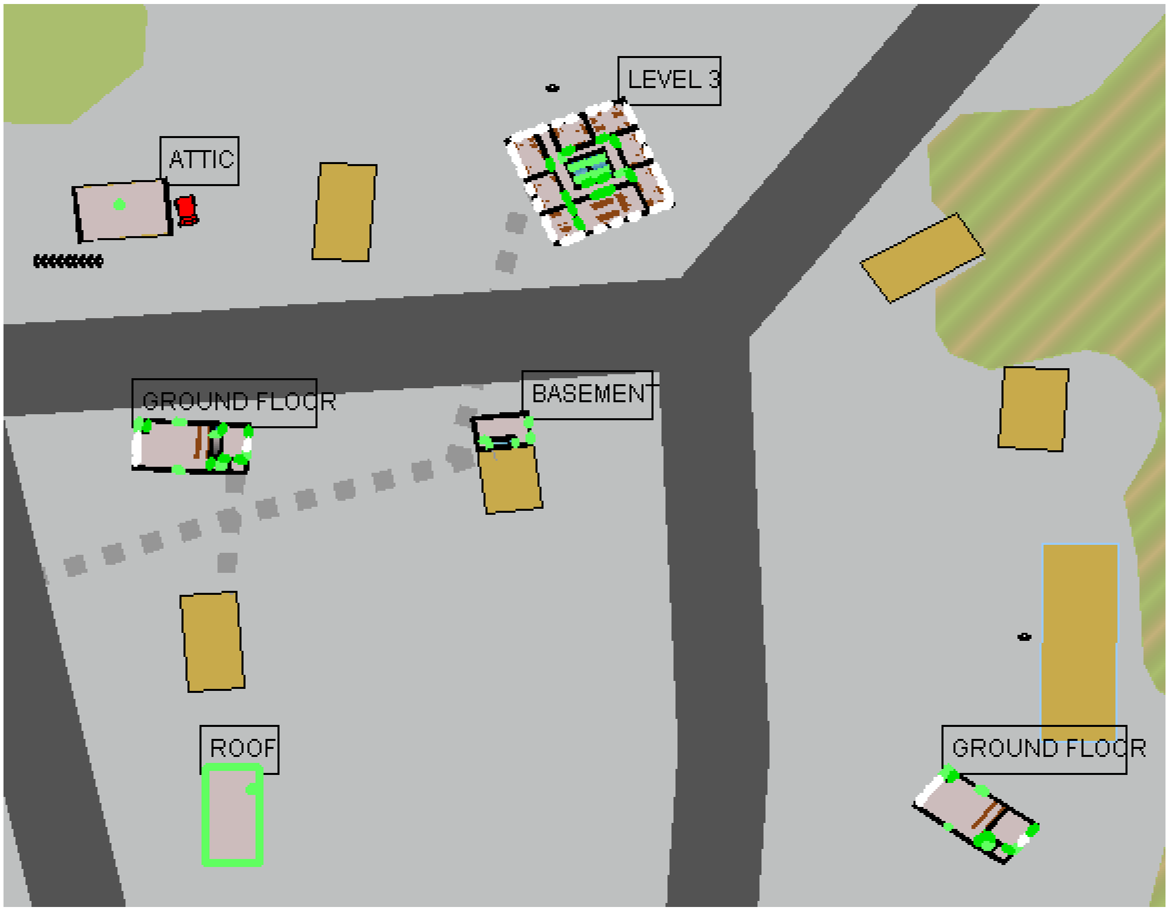
The above screen shot is a 1/1,000 scale view of the Shugart-Gordon MOUT village in the JRTC terrain database. The UHRB buildings are outlined with the thin black line.

To access the UHRBs

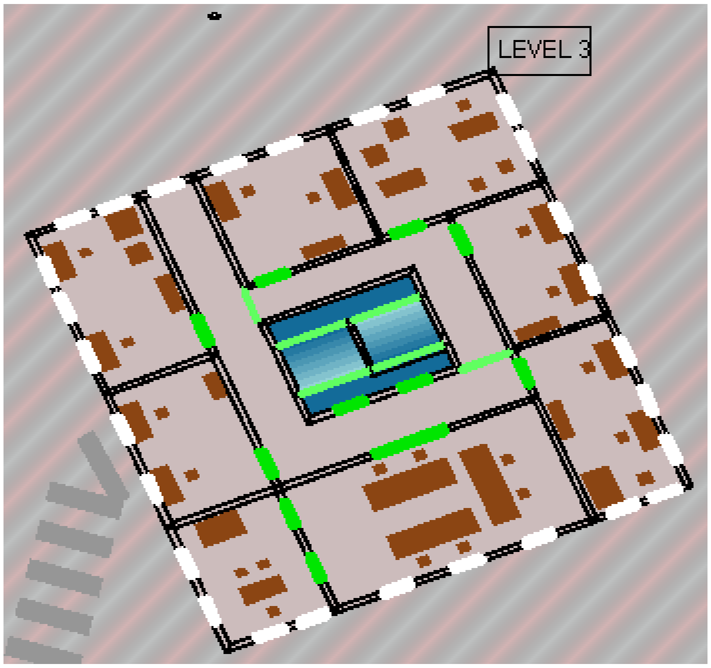
- Move the cursor over the UHRB
- RC directly on the building – the pop-up window will appear
- Mouse over Current Floor
- Mouse over the level of the building you wish to use and LC


Properties Ctrl+Shift+P
Battle Command Frames Ctrl+Shift+B
Magic Hitch
Mount Unit
Center PVD
Tether PVD
Un_Tether PVD
InsertPoint
DeletePoint
Set as US Side
Unset as US Side
Set as POV
Declutter Top
Declutter Up
Clutter Down
Clutter Bottom
Echelon Filter
Add
Current Floor
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Multiple Paste
Delete Delete
Override CGF/HITL Control
Perform Terrain Reasoning
CFS
Side Relationships
Sensor
ROOF
LEVEL 3
LEVEL 2
GROUND FLOOR
BASEMENT
Off

The pop-up windows will disappear and the PVD screen will depict the building at the floor or level selected. The following screen shot shows many different UHRBs located in the Shugart-Gordon MOUT village. Each building depicts the different levels available. Not all buildings are built with the same amount of levels; the pop-up window lists the amount of levels available for selection.

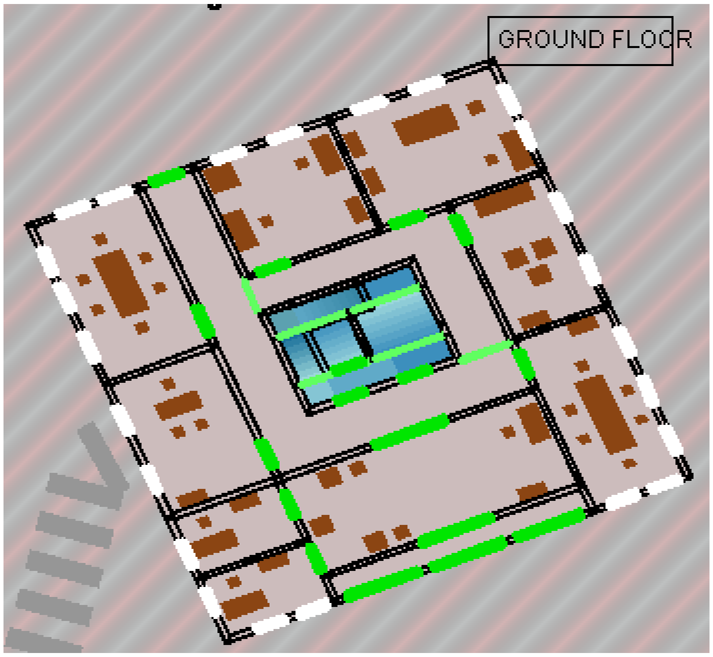

LEVEL 3
ATTIC
GROUND FLOOR
BASEMENT
ROOF
GROUND FLOOR

A closer view of one building shows you the difference in floor plans, entry points, and windows.



This is a view of the 3rd level of a 3 story building. The floor is divided into rooms that contain different types of furniture (brown squares and rectangles). The white lines around the perimeter of the floor depict windows. The green lines inside the perimeter depict the doors or interior wall openings. The blue area directly in the middle of the floor depicts the stairwell between floors.

This is the ground floor view of the same building. The main difference between the two is the 3 entry doors (green) located on the front of the building.



Appendix G

List of Available Behaviors

This appendix lists the available behaviors by echelon

Hostile Entity Behaviors

- Activate Emitter
- Activate/Extinguish Light Source
- Apply Area Effects
- Breach Wall
- Change Posture
- Clear and Mark Lane
- Conduct Entity MEDEVAC
- Conduct Entity Treatment
- Conduct Ground Reconnaissance
- Conduct Hijacking
- Conduct Interview
- Conduct Re-supply
- Construct Hole Manually
- Construct HVIED
- Construct Obstacle
- Cue Radar
- Detonate Explosives
- Detonate Self
- Disperse Randomly
- Drop Cargo
- Emplace Explosives
- Emplace Mine
- Emplace Minefield
- Emplace Or Displace Ground Sensor System
- Employ Smoke
- Execute Sniper Mission
- Execute Checkpoint
- Fire At Location
- Fire And Relocate
- Generate and Send Cleared Hot Message
- Generate and Send Nine Line Message
- Go To Place
- Hitch Unhitch
- Issue Entity Indirect Fire Command
- Load/Unload
- Loiter
- Magic Area Detonation
- Magic Create NBC Cloud
- Magic Damage
- Magic Fire Event
- Magic Hitch Unhitch
- Magic Mount Dismount
- Magic Move
- Make Captive
- Mark Lane
- Monitor Controlled Minefields
- Mount Dismount
- Move Tactically
- Move To Floor
- NBC Recon
- Occupy Sniper Position
- Open or Close Aperture
- Pickup/Drop-off Mounter
- Prepare Fighting Position
- Prepare Gap Crossing
- Road Route Movement
- Send Ctil/Bril Message
- Send Location Report
- Send Logistics Report
- Send MOPP Message
- Send Observation Report
- Send Overlay Message
- Send Situation Message
- Send Threat Warning Message
- Set Apparent Side
- Set Engagement Criteria
- Tow To Location
- Transfer Cargo to Basic Load
- Transfer Crew
- Travel Roads

Friendly Entity Behaviors (Humanoid)

- Activate Emitter
- Apply Area Effects
- Breach Wall
- Change Posture

- Clear And Mark Lane
- Conduct Entity MEDEVAC
- Conduct Entity Treatment
- Conduct Ground Reconnaissance
- Conduct Hijacking
- Conduct Interview
- Conduct Re-supply
- Construct Hole Manually
- Construct HVIED
- Construct Obstacle
- Conventional Infiltration
- Cue Radar
- Detonate Explosives
- Detonate Self
- Disperse Randomly
- Drop Cargo
- Emplace Explosives
- Emplace Mine
- Emplace Minefield
- Emplace Or Displace Ground Sensor System
- Employ Smoke
- Execute Checkpoint
- Execute Sniper Mission
- Fire And Relocate
- Fire At Location
- Fire Weapon
- Generate And Send Cleared Hot Message
- Generate and Send Nine Line Message
- Go To Place
- Hitch Unhitch
- Immediate Decontamination
- Issue Entity Indirect Fire Command
- Load/Unload
- Loiter
- Magic Area Detonation
- Magic Create NBC Cloud
- Magic Damage
- Magic Fire Event
- Magic Hitch Unhitch
- Magic Mount Dismount
- Magic Move
- Make Captive
- Mark Lane
- Monitor Controlled Minefields
- Mount Dismount
- Move Tactically
- Move To Floor
- NBC Recon
- Occupy Sniper Position
- Open or Close Aperture
- Pickup/Drop-off Mounter
- Prepare Fighting Position
- Prepare Gap Crossing
- Road Route Movement
- Send Ctil/Bril Message
- Send Location Report
- Send Logistics Report
- Send MOPP Message
- Send Observation Report
- Send Overlay Message
- Send Situation Message
- Send Threat Warning Message
- Set Apparent Side
- Set Engagement Criteria
- Tow To Location
- Transfer Cargo to Basic Load
- Transfer Crew
- Travel Roads

Friendly Entity Behaviors (Rotary Wing A/C (RWA) and UAV)

- Conduct Aerial Delivery
- Conduct Aerial Refueling
- FARP Re-supply
- RWA Change Altitude
- RWA Land
- RWA Move Tactically
- RWA Move Tactically Traveling
- RWA Platform follow route
- RWA Take Off
- RWA Conduct Entity MEDEVAC
- RWA Flee

- UAV Conduct Surveillance

Non-Combatant Entity Behaviors

- Activate/Extinguish Light Source
- Change Posture
- Conduct Entity MEDEVAC
- Conduct Ground Reconnaissance
- Conduct Hijacking
- Conduct Interview
- Conduct Re-supply
- Construct HVIED
- Construct Obstacle
- Detonate Explosive
- Detonate Self
- Disperse Randomly
- Drop Cargo
- Emplace Explosive
- Entity Infiltrate Unconventional
- Go To Place
- Hitch Unhitch
- Issue Human Factors
- Load/Unload
- Loiter
- Magic Create NBC Cloud
- Magic Damage
- Magic Hitch Unhitch
- Magic Mount Dismount
- Magic Move
- Mark Lane
- Mount Dismount
- Move Tactically
- Move To Floor
- NBC Recon
- Open or Close Aperture
- Pickup/Drop-off Mounter
- Prepare Fighting Position
- Road Route Movement
- Set Apparent Side
- Transfer Cargo to Basic Load
- Transfer Crew
- Travel Roads
- Unconventional Infiltration

Platoon Behaviors

- Activate/extinguish Light Source
- Apply Area Effects
- Assault Building
- Assault Buildings In Area
- Attack Built Up Area
- Attack By Fire
- Change Formation
- Change Posture
- Clear And Mark Lane
- Clear Lane
- Combined Arms Breach
- Conduct Ambush
- Conduct Capture Rescue
- Conduct Checkpoint
- Conduct Entity Treatment
- Conduct Ground Reconnaissance
- Conduct Hijacking
- Conduct Interview
- Conduct MEDEVAC
- Conduct Perimeter Security
- Conduct Raid
- Conduct Screen And Guard
- Construct Obstacle
- Conventional Infiltration
- Cross Level Supplies
- Detonate Explosives
- Disperse Circular
- Disperse Randomly
- Emplace Controlled Minefield
- Emplace Explosives
- Emplace Mine
- Emplace Minefield
- Emplace Or Displace Ground Sensor System
- Employ Smoke
- Execute Ambush
- Hitch Unhitch
- Immediate Decontamination
- Issue Fire Order
- Magic Hitch Unhitch
- Magic Mount Dismount
- Magic Move
- Maneuver And Occupy Fire Support Position

- Mount Dismount
- Move Tactically
- NBC Recon
- Occupy Position
- Passage of Lines Forward
- Passage of Lines Rearward
- Perform Operational Decon
- Perform River Crossing
- Prepare Fighting Position
- Prepare for Aerial Delivery
- Prepare For Re-supply
- Prepare Gap Crossing
- Send Ctil/Bril Message
- Send Location Report
- Send Logistics Report
- Send Medical Unit SITREP
- Send MOPP Message
- Send Observation Report
- Send Overlay Message
- Send Personnel Status Report
- Send Situation Message
- Send Supply Point Status
- Send Threat Warning Message
- Service Station Re-supply
- Set Apparent Side
- Set Engagement Criteria
- Set Side Relationship
- Set up Ambush
- Setup Decon Site
- Support By Fire
- Tailgate Re-supply
- Unconventional Cache Re-supply
- Withdraw
- Withdraw Assisted Not Under Enemy Pressure
- Withdraw Assisted Under Enemy Pressure

Company Behaviors

- Activate/Extinguish Light Source
- Apply Area Effects
- Assault Building
- Assault Buildings In Area
- Attack Built Up Area
- Attack By Fire
- Change Formation
- Change Posture
- Clear And Mark Lane
- Clear Lane
- Combined Arms Breach
- Conduct Ambush
- Conduct Capture Rescue
- Conduct Entity Treatment
- Conduct Ground Reconnaissance
- Conduct MEDEVAC
- Conduct Raid
- Conduct Screen And Guard
- Construct Obstacle
- Cross Level Supplies
- Detonate Explosives
- Disperse Circular
- Disperse Randomly
- Emplace Controlled Minefield
- Emplace Explosives
- Emplace Mine
- Emplace Minefield
- Emplace Or Displace Ground Sensor System
- Employ Smoke
- Execute Ambush
- Hitch Unhitch
- Immediate Decontamination
- Issue Fire Order
- Magic Hitch Unhitch
- Magic Mount Dismount
- Magic Move
- Mount Dismount
- Mount/Dismount
- Move Tactically
- Occupy Position
- Passage of Lines Forward
- Passage of Lines Rearward
- Perform Operational Decon
- Perform River Crossing
- Prepare Fighting Position
- Prepare for Aerial Delivery
- Prepare For Re-supply
- Prepare Gap Crossing
- Send Ctil/Bril Message
- Send Location Report
- Send Logistics Report
- Send Medical Unit SITREP
- Send MOPP Message
- Send Observation Report
- Send Overlay Message
- Send Personnel Status Report
- Send Situation Message

- Send Supply Point Status
- Send Threat Warning Message
- Serial Element Infiltrate conventional
- Service Station Re-supply
- Set Apparent Side
- Set Engagement Criteria
- Set Side Relationship
- Set up Ambush
- Set up Decon Site
- Support By Fire
- Tailgate Re-supply
- Unconventional Cache Re-supply
- Withdraw
- Withdraw Assisted Not Under Enemy Pressure
- Withdraw Assisted Under Enemy Pressure

Appendix H

List of Available Control Measures

Command and Control General Maneuver (C2 GM) Control Measures

- ACP
- Limit of advance
- AEW
- Line
- AOA friendly attack RW
- Line of contact
- AOA friendly aviation
- Line of departure
- AOA ground main attack
- Linkup point
- AOA Ground supporting attack
- Low level transit route
- ASW fixed wing
- Missile engagement zone
- Action point
- Named area of interest
- Air corridor
- Observation point
- Ambush
- Offense area attack by fire position
- Area of operations
- Offense area attack position
- Assault position
- Offense area objective
- Assembly area
- Offense area penetration box
- Battle position
- Offense area support by fire position
- Battle position prep not occupied
- Op OP combat OP
- Boundaries
- Op OP FO position
- Checkpoint
- Op OPNBC OP dismounted
- Contact point
- Op OP Occupied by dismounted scouts or recon
- Coordination point
- Passage point
- Corridor tab
- Phase line
- DOA aviation
- Pickup zone
- DOA ground main attack
- Point
- DOA ground supporting attack
- Point of departure
- Decision point
- Prepared defensive position
- Defense engagement area
- Principal direction of fire
- Defensive position site
- Rally point
- Engagement area
- Recon area
- Extraction zone
- Release line
- FEBA
- Release point
- Final coordination line
- Replenish
- FLOT
- Route
- Forward area air defense zone
- SUAAFR
- General area
- Start point
- General engagement area
- Tanking
- High density ACZ
- Target reference
- Holding line
- Targeted area of interest
- Infiltration line
- UAV route
- LDLC
- Waypoint
- Landing zone
- Weapons free zone

Combat Service and Support (CSS) Control Measures

- CSS Ambulance exchange point
- Rearm refuel and resupply
- Ammunition supply point
- Refugee holding area
- Ammunition transfer point
- Route
- Area brigade
- Regimental area
- Area division
- Supply point
- Cannibalization point
- Supply point class I
- Casualty collection point
- Supply point class II
- Detainee collection point
- Supply point class III
- Detainee holding area
- Supply point class IV
- EPW collection point
- Supply point class V
- EPW holding area
- Supply point class VI
- FARP
- Supply point class VII
- Halted convoy
- Supply point class VIII
- Logistics release point
- Supply point class X
- Main supply route
- Traffic control point
- Maintenance collection point
- Trailer transfer point
- Moving convoy
- UMCP
- ROM point

Mobility/Counter Mobility/Survivability (M/CM/S) Control Measures

- AP mine
- Fort
- AT mine
- Fortified line
- Abatis/Log obstacle
- Foxhole
- Alternate decontamination point unspecified
- High wire fence
- Anti tank ditch under construction
- Individual fighting position
- Anti tank wall
- Infantry trench
- Anti tank ditch complete
- Low wire fence
- Assault crossing area
- Mined area
- Biologically contaminated area
- Minefield
- Bridge
- Obstacle effect block
- Bypass difficult
- Obstacle effect disrupt
- Bypass easy
- Obstacle effect fix
- Bypass impossible
- Obstacle effect turn
- Chemically contaminated area
- Obstacle free area
- Controlled mine field
- Obstacle restrictive area
- Crater
- Obstacle belt
- Decontamination site POD
- Obstacle line
- Decontamination site PTD
- Radioactive area
- Decontamination site point equipment
- Road block complete
- Decontamination site point equipment and troops
- Single concertina
- Decontamination site point troops
- Single fence
- Decontamination point unspecified
- Surface shelter
- Double apron fence
- Tank reinforced with AT mines
- Double fence
- Triple strand concertina
- Double strand concertina
- Underground shelter

- Dragons teeth fixed and prefabricated
- Unspecified mine
- Dragons teeth moveable
- Unspecified wire obstacle
- Dragons teeth movable and prefabricated
- Water crossing lane
- Earthwork
- Weapon fighting position
- Engineer Bridge
- Wide area mines
- Engineer trench
- Zone
- Ferry

Fire Support Control Measures

- Airspace coordination line
- Liner target
- Area
- No fire area
- Area target
- No fire line
- Circular target
- Position area for artillery
- Coordinate fire line
- Rectangular target
- Final coordination line
- Restrictive fire area
- Final protective fire
- Restrictive fire line
- Fire support station
- Series of targets
- Free fire area
- Single target
- Linear smoke target
- Smoke

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